

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

**Table 17D-5. Estimated Rates of Existing Pollution-Attributable Disease in Neighborhoods Near the Cross Bronx Expressway**

MEASURE	HIGH BRIDGE– MORRISANIA	CROTONA– TREMONT	PELHAM– THROGS NECK	NEW YORK CITY
PM <sub>2.5</sub> asthma emergency room visits, Estimated annual rate (age 18+)	98.1	87.1	44.6	34.6
PM <sub>2.5</sub> asthma emergency room visits, Estimated annual rate (under age 18)	188.6	167.2	105.2	78.2
PM <sub>2.5</sub> hospitalizations for cardiovascular causes, Estimated annual rate	23.5	23.3	19.2	17.0
PM <sub>2.5</sub> hospitalizations for all respiratory causes, Estimated annual rate	25.8	21.4	15.9	11.8
Deaths from PM <sub>2.5</sub> , Estimated annual rate (age 30+)	43.0	38.4	42.8	37.7

Source: NYC Environment and Health Data Portal. 2015-2017 data.

Note: "Rate" is per 100,000 residents.

Regardless of cause, between 2010 and 2019, these three neighborhoods have generally been in the worst third of all New York City neighborhoods in terms of the percentage of adults who have had asthma in the last year. Though the percentages for Crotona–Tremont and High Bridge–Morrisania were in the middle third of neighborhoods in 2019, both at a rate of 6.2 percent, compared to 8.0 percent in Pelham–Throgs Neck, and 4.5 percent across the city, Crotona–Tremont and High Bridge–Morrisania have had higher percentages than Pelham–Throgs Neck over the period.<sup>71</sup>

Since 2010, rates of heart attack for those between the ages of 35 and 64 in these three neighborhoods have been in the middle or worst third of New York City neighborhoods. In 2016 (the latest year of available data), the rate of heart attack for every 100,000 adults of that age group in Crotona–Tremont and High Bridge–Morrisania, were 15.8 and 16.6, respectively. The rate in Pelham–Throgs Neck, at 14.3 per 100,000, was in the middle third of city neighborhoods.<sup>72</sup> For those 65 and older, heart-attack rates in the three neighborhoods along the Cross Bronx Expressway have more often shifted between the middle and worst third of New York City neighborhoods. In 2016, Crotona–Tremont had a rate of heart attack among this older age group at 59.1 per 100,000, High Bridge–Morrisania at 59.7, and Pelham–Throgs Neck at 49.4 (which was actually in the best third of city neighborhoods), compared to 55.7 citywide.<sup>73</sup>

Morrisania and Crotona, Belmont and East Tremont, and Highbridge and Concourse all had rates of diabetes substantially higher than New York City, while the rates for Fordham and University Heights, Parkchester and Soundview, and Throgs Neck and Co-op City were similar to the citywide rate.<sup>74</sup> Rates of hypertension were higher in Parkchester and Soundview, Fordham and University Heights, Throgs Neck and Co-op City, and Highbridge and Concourse, while rates in Morrisania and Crotona, as well as Belmont

<sup>71</sup> NYC Environment and Health Data Portal. Asthma (adults), Age-adjusted percent.

<sup>72</sup> NYC Environment and Health Data Portal. Heart attacks, Age-adjusted rate - Adults 35 to 64 Yrs Old.

<sup>73</sup> NYC Environment and Health Data Portal. Heart attacks, Age-adjusted rate Adults - 65 Yrs and Older.

<sup>74</sup> NYC DOHMH, 2018 Community Health Profiles Public Use Dataset. Percentage of adults ages 18 and older who report ever being told by a healthcare professional that they have diabetes.

and East Tremont were similar to the citywide rates.<sup>75</sup> Finally, average life expectancy was substantially lower than the citywide average (81.2 years) in all areas except for Throgs Neck and Co-op City (81.1 years); in these five areas, life expectancy ranged from 76.2 years in Morrisania and Crotona to 79.9 in Fordham and University Heights.<sup>76</sup>

### ***Neighborhoods Near the Robert F. Kennedy (RFK) Bridge***

The Hunts Point–Mott Haven and East Harlem neighborhoods have higher or worse estimated burdens of illness and disease attributable to PM<sub>2.5</sub> than two-thirds of the city's other neighborhoods, while the residents of Long Island City–Astoria have rates that are in the middle third or the best third. **Table 17D-6** describes these measures in detail.

**Table 17D-6. Estimated Rates of Pollution-Attributable Disease in Neighborhoods Near the RFK Bridge**

MEASURE	EAST HARLEM	HUNTS POINT–MOTT HAVEN	LONG ISLAND CITY –ASTORIA	NEW YORK CITY
PM <sub>2.5</sub> asthma emergency room visits, Estimated annual rate (age 18+)	111.6	104.6	21.8	34.6
PM <sub>2.5</sub> asthma emergency room visits, Estimated annual rate (under age 18)	215.5	194.7	46.1	78.2
PM <sub>2.5</sub> hospitalizations for cardiovascular causes, Estimated annual rate	25.5	24.3	14.7	17.0
PM <sub>2.5</sub> hospitalizations for all respiratory causes, Estimated annual rate	20.3	26.5	9.3	11.8
Deaths from PM <sub>2.5</sub> , Estimated annual rate (age 30+)	54.2	45.4	31.4	37.7

Source: NYC Environment and Health Data Portal. 2015–2017 data. Note: “rate” is per 100,000 residents.

In Hunts Point–Mott Haven, adult asthma rates were consistently worse than neighborhoods across the city, with a rate of 6.2 percent in 2019 compared with 4.5 percent citywide. Data for both Long Island City–Astoria and East Harlem varied greatly from year to year in NYC DOHMH for the three neighborhoods and show no consistent patterns in relation to each other or in comparison to neighborhoods across the city.<sup>77</sup>

For heart attacks among 35-to-64-year-olds, age-adjusted rates in East Harlem and Hunts Point–Mott Haven were in the top third of neighborhoods across the city (20.2 and 19.8 per 100,000 residents against 12.7 respectively), while rates in Long Island City–Astoria were in the middle third. In 2016, age-adjusted rates for heart attacks among 35-to-64-year-olds was lower than the citywide figure at 10.3 per 100,000 residents.<sup>78</sup> The pattern was similar for heart attacks among those 65 and older, with East Harlem and Hunts Point–Mott Haven consistently in the third of neighborhoods with the worst rates of heart attack,

<sup>75</sup> NYC DOHMH, 2018 Community Health Profiles Public Use Dataset. Percentage of adults ages 18 and older who report ever being told by a healthcare professional that they have hypertension, also known as high blood pressure.

<sup>76</sup> NYC DOHMH, 2018 Community Health Profiles Public Use Dataset.

<sup>77</sup> NYC Environment and Health Data Portal. Asthma (adults), Age-adjusted percent; for many years, data are suppressed or come with the flag “Estimate is based on small numbers so should be interpreted with caution.”

<sup>78</sup> NYC Environment and Health Data Portal. Heart attacks, Age-adjusted rate - Adults 35 to 64 Yrs Old.



## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

and Long Island City–Astoria either in the middle third of neighborhoods or—in 2014, 2015, and 2016—the best third.<sup>79</sup>

As with heart attack, rates of diabetes were higher in East Harlem and Mott Haven and Melrose than across New York City, while rates in Long Island City–Astoria were similar to the citywide rate.<sup>80</sup> Meanwhile, rates of hypertension were higher than the citywide rate in Mott Haven and Melrose, similar to the citywide rate in East Harlem, and lower than the citywide rate in Long Island City–Astoria.<sup>81</sup> Average life expectancy was lower in East Harlem (77.3) and Mott Haven and Melrose (77.6) than the citywide average (81.2 years), though it was higher in Long Island City–Astoria (83.4); as seen with other measures, life expectancies indicate that East Harlem and Mott Haven and Melrose are already burdened with illness and disease greater than the city as a whole, while Long Island City–Astoria is not.<sup>82</sup>

### *Neighborhoods Near the Staten Island and Dr. Martin Luther King, Jr. Expressways*

The Staten Island Expressway passes through the Stapleton–St. George and Willowbrook UHF neighborhoods of Staten Island. At the western end of the borough, the Expressway forms the southern boundary of the Port Richmond UHF neighborhood. Port Richmond is also roughly bisected into eastern and western portions by the Dr. Martin Luther King Jr. Expressway and the approach to the Bayonne Bridge.

The Port Richmond neighborhood has higher rates of pollution-related illness and disease relative to other neighborhoods in the city, and the majority of its census tracts are environmental justice census tracts. Stapleton–St. George also has many census tracts that are environmental justice tracts, mostly north of the Staten Island Expressway; residents also have higher rates of pollution-attributable diseases relative to other city neighborhoods, but on fewer measures than residents in Port Richmond. Finally, Willowbrook is the least burdened of the three, and has a smaller share of census tracts that are designated as environmental justice tracts.

On several measures, NYC DOHMH estimates that the Port Richmond neighborhood is burdened with rates of disease and illness attributable to PM<sub>2.5</sub> that are higher than two-thirds of New York City neighborhoods. Similarly, Stapleton–St. George residents also experience health burdens at worse rates than two-thirds of New York City neighborhoods on certain measures. Meanwhile, Willowbrook’s residents experience health burdens at worse rates than two-thirds of New York City neighborhoods on certain measures, but on others they have pollution-linked disease and illness rates that are in the best third of the city’s neighborhoods (Table 17D-7).

<sup>79</sup> NYC Environment and Health Data Portal. Heart attacks, Age-adjusted rate Adults - 65 Yrs and Older.

<sup>80</sup> NYC DOHMH, 2018 Community Health Profiles Public Use Dataset. Percentage of adults ages 18 and older who report ever being told by a healthcare professional that they have diabetes.

<sup>81</sup> NYC DOHMH, 2018 Community Health Profiles Public Use Dataset. Percentage of adults ages 18 and older who report ever being told by a healthcare professional that they have hypertension, also known as high blood pressure.

<sup>82</sup> NYC DOHMH, 2018 Community Health Profiles Public Use Dataset.

**Table 17D-7. Estimated Rates of Pollution-Attributable Disease in Neighborhoods Near the Staten Island Expressway and the Dr. Martin Luther King Jr Expressway**

MEASURE	PORT RICHMOND	STAPLETON-ST. GEORGE	WILLOWBROOK	NEW YORK CITY
PM <sub>2.5</sub> asthma emergency room visits, Estimated annual rate (age 18+)	45.6	32	12.9	34.6
PM <sub>2.5</sub> asthma emergency room visits, Estimated annual rate (under age 18)	66.9	49.5	18.8	78.2
PM <sub>2.5</sub> hospitalizations for cardiovascular causes, Estimated annual rate	17.9	19.1	16.8	17.0
PM <sub>2.5</sub> hospitalizations for all respiratory causes, Estimated annual rate	17.4	17.6	14.1	11.8
Deaths from PM <sub>2.5</sub> , Estimated annual rate (age 30+)	41.9	50	48.4	37.7

Source: NYC Environment and Health Data Portal. 2015-2017 data. Note: "rate" is per 100,000 residents.

Observed rates of adult asthma, measured in percent of adults with cases in the last year, vary greatly from year to year in NYC DOHMH for the three neighborhoods and show no consistent patterns in relation to each other or in comparison to the entire city.<sup>83</sup>

Age-adjusted rates of heart attack for those between the ages of 35 and 64 in these three neighborhoods have been in the middle or worst third of New York City neighborhoods from 2010 through 2016 (the latest year of available data), though rates were higher in Port Richmond and Stapleton–St. George than they were in Willowbrook. In 2016, the age-adjusted rate of heart attack for every 100,000 adults of the 35 to 64 age group in Port Richmond was 21.7, and in Stapleton–St. George, it was 21.8. Those rates compare to 14.7 per 100,000 Willowbrook and 12.7 across New York City.<sup>84</sup> Rates of heart attack for those 65 and older vary between 2010 and 2016 such that there is not a consistent difference between the neighborhoods or between the neighborhoods and the entire city.

For NYC DOHMH Community Health Profiles Data, St. George and Stapleton (which is the entire area of Staten Island north of the Staten Island Expressway) and South Beach and Willowbrook (the area south of the Staten Island Expressway and north of Fresh Kills) are the neighborhoods for which hypertension, diabetes, and life expectancy data are available.

Both Community Districts had rates of diabetes and hypertension similar to rates across New York City.<sup>85</sup> Finally, average life expectancy in St. George and Stapleton was lower than the New York City average at 79, while life expectancy in South Beach and Willowbrook was 81.2, which was the same as the New York City average.<sup>86</sup>

<sup>83</sup> NYC Environment and Health Data Portal. Asthma (adults), Age-adjusted percent; for some years, data are suppressed or come with the flag "Estimate is based on small numbers so should be interpreted with caution."

<sup>84</sup> NYC Environment and Health Data Portal. Heart attacks, Age-adjusted rate - Adults 35 to 64 Yrs Old.

<sup>85</sup> NYC DOHMH, 2018 Community Health Profiles Public Use Dataset. Percentage of adults ages 18 and older who report ever being told by a healthcare professional that they have diabetes; Percentage of adults ages 18 and older who report ever being told by a healthcare professional that they have hypertension, also known as high blood pressure.

<sup>86</sup> NYC DOHMH, 2018 Community Health Profiles Public Use Dataset; Life Expectancy.

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

***New Jersey Municipalities Near Major Highways (I-95, I-80, I-280, and I-78)***

NJDOH and NJDEP's New Jersey Healthy Community Planning program publishes six metrics for pollution-linked illness and disease:

- All Cancer Deaths, age-adjusted rate per 100,000
- Asthma Emergency Room Visits, age-adjusted rate per 10,000
- Chronic obstructive pulmonary disease (COPD) Emergency Room Visits, age-adjusted rate per 10,000
- Heart Attack (AMI) Hospitalizations, age-adjusted rate per 10,000
- Heart Disease Deaths, age-adjusted rate per 100,000
- Stroke based on In Patient Hospitalization data, age-adjusted rate per 100,000

The most burdened municipalities identified in this data set are Bayonne and East Orange, which have rates of these six metrics that are above those for all of New Jersey; Newark has rates above the statewide rates on five metrics; Irvington and Jersey City have rates above the statewide rates for four metrics; Elizabeth and Hillside for three; and Hackensack has rates that are above statewide rates for two metrics.

In contrast, East Rutherford, Englewood, Fort Lee, Kearny, Leonia, North Bergen, and Union Township are the least burdened; their populations have rates similar or below statewide rates for all six of these pollution-linked illnesses and diseases.<sup>87</sup> **Table 17D-8** summarizes the metrics for all municipalities.

---

<sup>87</sup> HCP-NJ did not report rates of chronic obstructive pulmonary disease (COPD) emergency room visits for Leonia, though it has rates similar to or below the statewide rates on all five other metrics; the HCP-NJ FAQ page notes that "HCP-NJ data have been summarized or suppressed as needed to prevent identification of any individual or when data are highly unstable." Refer to "How do you keep individual-level public health data confidential?" NJDOH and NJDEP. "FAQs." Healthy Community Planning. <https://www.nj.gov/health/hcpnj/faqs/>. HCP-NJ reports do not make trend data available for comparisons over time.

**Table 17D-8. Rates of Pre-Existing Chronic Disease in New Jersey Municipalities Near Major Highways**

LOCATION	ASTHMA EMERGENCY ROOM VISITS PER 10,000	ALL CANCER DEATHS PER 100,000	HEART ATTACK HOSPITALI- ZATIONS PER 10,000	HEART DISEASE DEATHS PER 100,000	COPD EMERGENCY ROOM VISITS PER 10,000	STROKE HOSPITALI- ZATIONS PER 10,000
<b>Bergen</b>						
East Rutherford	28.6	155.8	11.7	159.2	14.2	13.6
Englewood	66.7	145.9	13	129.2	23.8	19.5
Fort Lee	19.4	120.3	7.8	88.5	6.4	12.4
Hackensack	90.4	136.8	18.2	146.5	35	22
Leonia	8	118.2	6.5	91.7	Not available	10.7
Ridgefield	25.2	218.8	15.3	151.1	13.8	20.9
<b>Essex</b>						
East Orange	169.1	170.7	20.1	231.9	46.5	30.4
Irvington	159.2	156.4	20.5	167.4	30.7	34.2
Newark	176.9	147.5	21.2	179	49.1	29
<b>Hudson</b>						
Bayonne	66	163.2	24.6	194.2	52.6	22.3
Jersey City	80.5	134	18.6	155.9	46.3	23.3
Kearny	31.2	131	14.7	123.6	16	18.4
North Bergen	41.2	106.5	16.8	127.8	23	16.3
<b>Union</b>						
Elizabeth	90	138.3	14.5	152	44.4	24.8
Hillside	95.1	176	14.1	163.8	19.8	24.1
Union Township	41.3	120.1	10.8	137.2	12.7	19
<b>New Jersey</b>						
	55.7	144.6	16.3	163.7	24.6	19.8

Source: NJDOH and NJDEP. Healthy Community Planning.

Notes: All rates are age-adjusted.

**17D-5.6 ENVIRONMENTAL JUSTICE COMMUNITIES BURDENED BY PRE-EXISTING POLLUTANTS OR CHRONIC DISEASE**

As noted above, the USEPA EJScreen's environmental indicators are presented both as magnitudes and percentile values. According to USEPA, geographies (tracts, cities, or counties) at or above the 80th percentile should generally be considered further to identify potential risks to the local population related to air pollutants.<sup>88</sup> Like EJScreen, the CDC's EJI presents data both as rates of prevalence and percentile values, which allow the user to compare the prevalence of each health burden in a selected census tract to the prevalence of that same burden among all census tracts nationwide. According to the CDC, a percentile ranking of greater than 66.66 percent of all U.S. census tracts is considered an area with a high estimated prevalence of the subject health condition.<sup>89</sup>

<sup>88</sup> USEPA. 2019. "EJSCREEN Environmental Justice Mapping and Screening Tool: EJSCREEN Technical Documentation." September. [https://www.epa.gov/sites/default/files/2021-04/documents/ejscreen\\_technical\\_document.pdf](https://www.epa.gov/sites/default/files/2021-04/documents/ejscreen_technical_document.pdf), pp. 26-28.

<sup>89</sup> CDC. *Environmental Justice Index Indicators*. Access on November 15, 2022, at [https://www.atsdr.cdc.gov/placeandhealth/eji/technical\\_documentation.html](https://www.atsdr.cdc.gov/placeandhealth/eji/technical_documentation.html).



**Appendix 17D: Technical Memorandum –**

## Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

As such, environmental justice census tracts in the 10-county environmental justice study area where both pre-existing/cumulative pollutant burdens are above the 80th percentile for the United States or existing health burdens are above the 66.66th percentile for the United States were identified for analysis purposes.

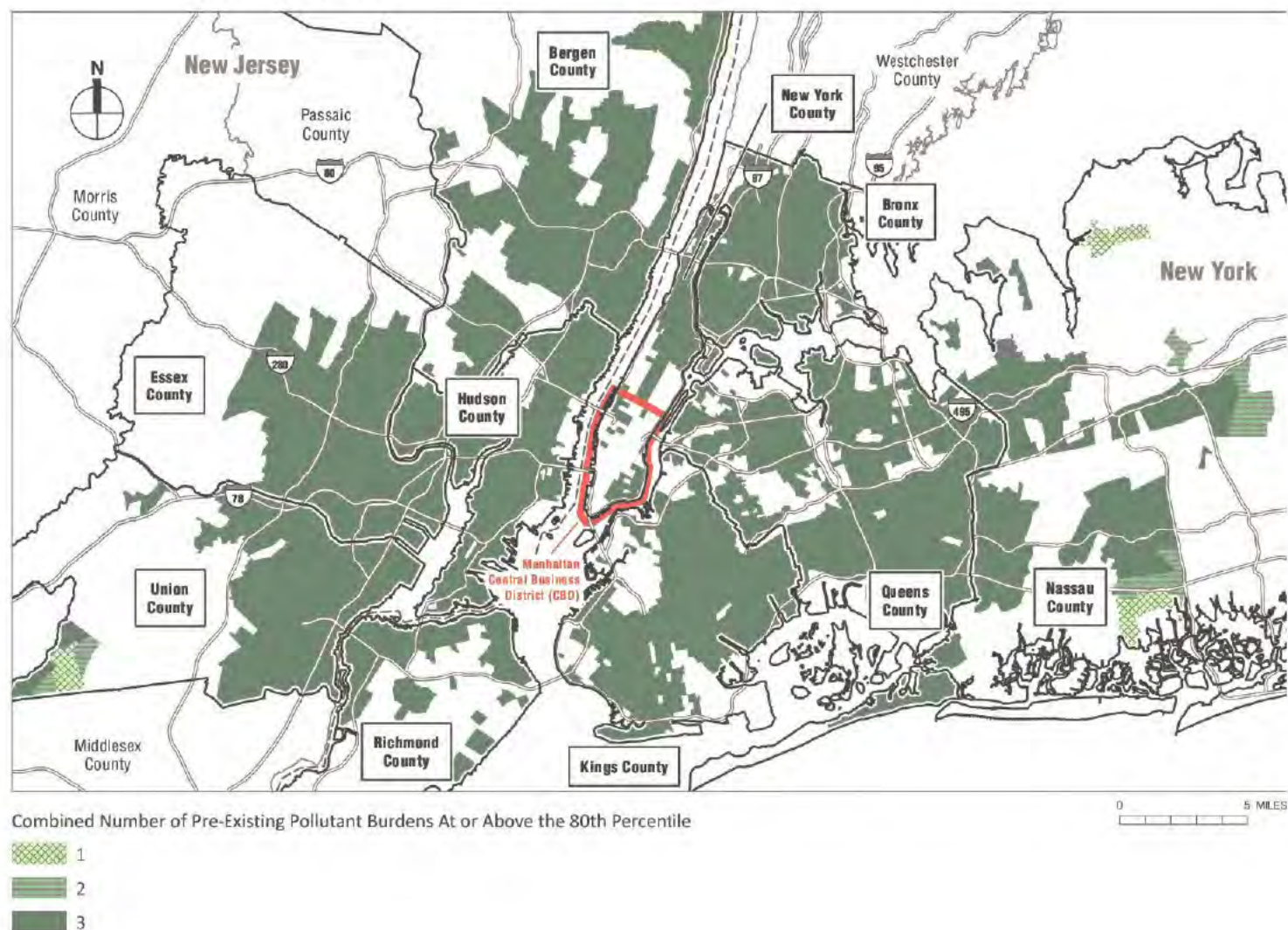
**Figure 17D-8** depicts the census tracts with at least one pollutant burden above the 80th percentile and indicates the number of pre-existing pollutant burdens that each tract experiences at those levels. **Figure 17D-9** provides the same information for the pre-existing chronic-disease burdens above the 66.66th percentile. Finally, **Figure 17D-10** shows the communities burdened by at least one pre-existing pollutant or health burden over the 80th or 66.66th national percentile, respectively, as well as the total number of indicators, combined. For details on pre-existing air pollutant and chronic disease burdens at the census tract level, see **Appendix C** of this Technical Memorandum.

As shown in **Figure 17D-8**, census tracts with pre-existing pollutant burdens above the 80th national percentile are generally located in the central portion of the 10-county study. Most of the communities in the Bronx fall into this group, along with communities in Kings (Brooklyn) and Queens Counties, northern areas of New York (Manhattan) and Richmond (Staten Island) Counties, the western portion of Nassau County, much of Hudson County, and the eastern portions of Bergen, Essex, and Union Counties. It should be noted that although four pollutants were analyzed, PM<sub>2.5</sub> does not exceed the 80th national percentile in any census tract in the 10-county environmental justice study area. As such, **Figure 17D-8** solely identifies census tracts with one to three burdens.

As noted above, **Figure 17D-9** depicts census tracts with chronic health burdens above the 66.66th national percentile. As shown in **Figure 17D-9**, these census tracts are concentrated in Bronx County, the central portions of Kings and Queens Counties, the northern portion of New York and Richmond Counties, the western portion of Hudson County, the eastern portions of Essex and Union Counties, and, to a lesser degree, in portions of Bergen and Nassau Counties.

To illustrate the cumulative effects of both pre-existing pollutant and health burdens in the 10-county environmental justice study area, both criteria were plotted in **Figure 17D-10**. As shown in **Figure 17D-10**, the highest occurrences of both pre-existing pollutant and health burdens are found in Bronx County, central Kings and Queens Counties, northern Manhattan (New York County) and Richmond County, and eastern Essex, Hudson, and Union Counties. Additionally, high levels of combined pre-existing pollutant and health burdens are present in portions of Far Rockaway in Queens County.

**Figure 17D-8. Environmental Justice Designated Census Tracts with One or More Pre-Existing Pollutant Exposure Burdens Above the 80<sup>th</sup> National Percentile**

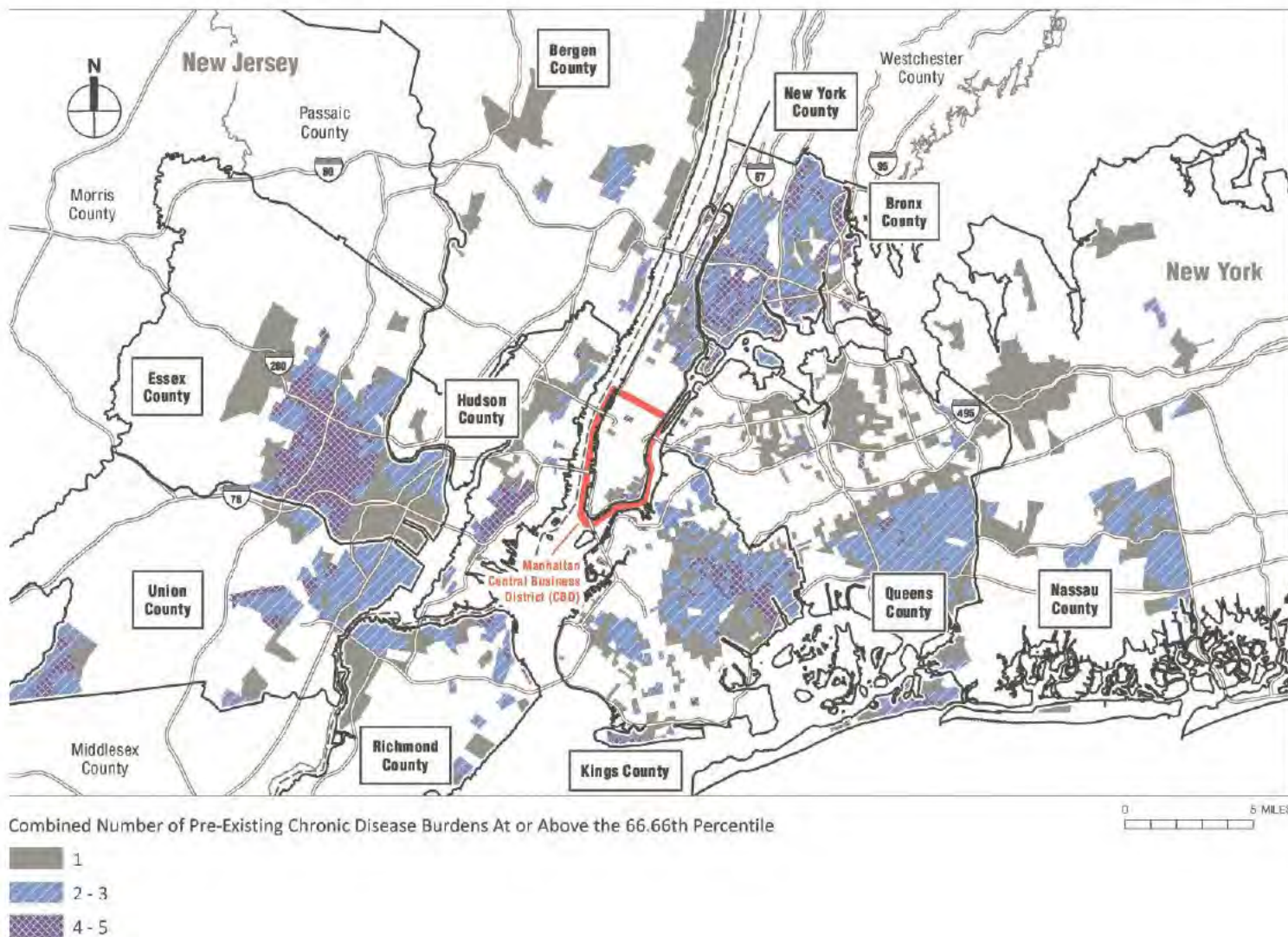


Source: EJScreen 2021 data.



## Appendix 17D: Technical Memorandum –

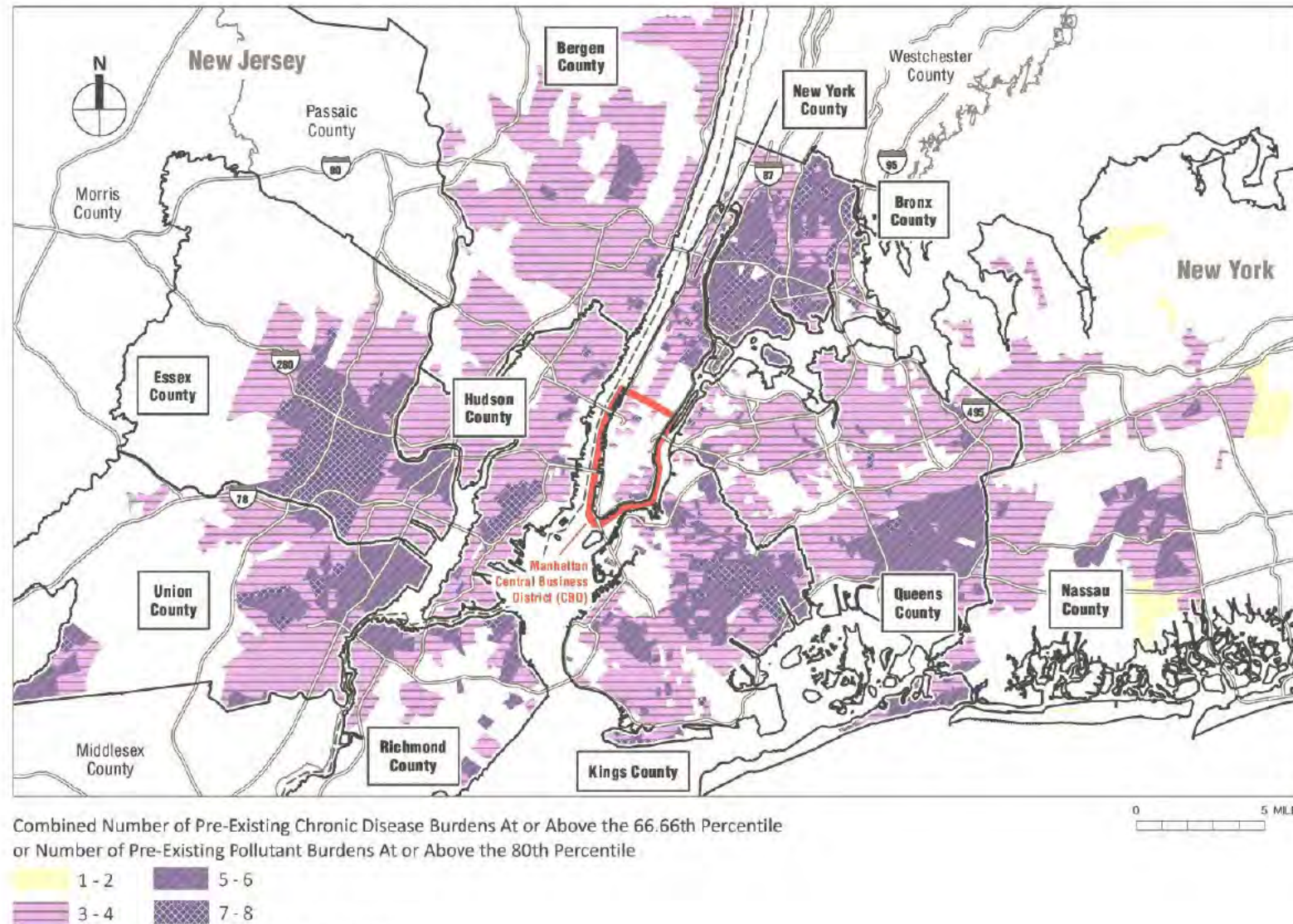
Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

**Figure 17D-9. Environmental Justice Designated Census Tracts with Pre-Existing Chronic Disease Burdens Above the 66.66<sup>th</sup> National Percentile**

Source: EJI 2022 data.



**Figure 17D-10. Environmental Justice Designated Census Tracts with Pre-Existing Pollutant or Chronic Disease Burdens above the 80th or 66.66th National Percentile, Respectively**



Source: USEPA EJScreen 2021 data. EJI 2022



## 17D-6. CBD Tolling Program Effects on Traffic

### 17D-6.1 OVERALL TRAFFIC EFFECTS

The region's history of development and the pre-existing burdens of pollutants and chronic disease in environmental justice communities are part of the context in which the Project Sponsors have proposed the CBD Tolling Program. This section brings together data about those burdens with the results of modeling for the Project to understand more fully which overburdened environmental justice communities, relative to national percentiles, could see traffic proximity decreases and increases under the CBD Tolling Alternative.

Changes in traffic volumes throughout the Project's 28-county study area were screened in relation to potential air quality effects on pre-existing pollution burdens in accordance with the Clean Air Act and the Final Transportation Conformity Rule (40 CFR Parts 51 and 93). The EA's air quality assessment for conformity showed that the Project will not create any new or worsen any existing violation of the NAAQS nor would the Project delay timely attainment of any NAAQS.

The purpose of this discussion is different than those regarding traffic and regional air quality in the EA, which focused on potential adverse traffic effects (Subchapter 4B, "Transportation: Highways and Local Intersections") and potential adverse air quality effects (Chapter 10, "Air Quality"). Here, the focus relates to environmental justice and the combination of pre-existing overburdened areas, relative to national percentiles, and the Project effects. Therefore, the analytical methodologies for identifying locations of concern are also different.

The focus of the traffic screening analysis in the EA was to identify highway links that may experience potential adverse traffic effects (in terms of delay experienced by drivers) during the peak analysis periods. To evaluate the potential effects of the Project on the highway system, a screening analysis using the Best Practice Model (BPM) for all tolling scenarios was conducted to identify highway segments with a potential increase in traffic volumes greater than 5 percent. From this analysis, the tolling scenario that would be representative of those with the highest potential to increase traffic was selected and then used to assess the potential for changes in queue length, delay times, density, speeds, and level of service. The analysis examined the percentage increase in traffic—considering all vehicle classes—and the volume-to-capacity (v/c) ratio, which is a measure of congestion during the morning, midday, and evening (AM, MD, and PM) periods. The analysis used a screening threshold to identify highway links with a v/c ratio of 0.95 (near capacity) and an increase in volume of 10 percent or higher in the dominant direction during an analysis period for further analysis. Highway links that did not meet both criteria were screened out because they would be unlikely to experience adverse traffic effects.

On the other hand, the focus of this discussion of traffic increases that could exacerbate pre-existing pollution burdens examines the increases in two-way 24-hour traffic volumes, with an initial focus on truck traffic, as health-based air quality standards are based on exposure over 24-hour periods, and longer. The most relevant metric is the daily increase in truck traffic, rather than the temporal distribution of the traffic increase or the potential effect on congestion. Because most of the increases in truck traffic would occur

during the off-peak periods, especially during nighttime, congestion is not a large factor in the potential increase in truck emissions that could affect potentially vulnerable communities from an air quality and health perspective. Therefore, the links identified for the traffic screening and air quality screening in this analysis are not the same due to differences in the screening criteria relating to the vehicle classes considered, temporal distribution of the increase in traffic, and the application of a congestion criteria for the traffic screening. Further details on the truck traffic screening can be found in **Section 17D-4**.

With the CBD Tolling Alternative, total regional VMT and vehicle-hours traveled would be reduced. The largest reductions would occur in the Manhattan CBD and would diminish farther away from the Manhattan CBD. Due to these reductions in vehicle traffic, the CBD Tolling Alternative is anticipated to lower emission burdens and benefit air quality regionally, as compared to the No Action Alternative both after Project implementation and in future years (modeled for 2045).<sup>90</sup>

However, traffic modeling for the Project indicates that the CBD Tolling Alternative would result in some traffic diversions around Manhattan, into the Bronx and northern New Jersey and Staten Island in all tolling scenarios. These circumferential diversions are due to implementation of the tolling in the Manhattan CBD, as some drivers and trucks traveling to and from Long Island and Pennsylvania would divert around Manhattan to avoid the tolling in the Manhattan CBD. Modeling indicates that the locations and sizes of diversions depend on the toll-rate structure in each CBD tolling scenario.

Tolling Scenarios A, B, C, and G, with the lowest level of discounts, exemptions, and/or crossing credits, would reduce the overall traffic volumes entering and leaving the Manhattan CBD with the least potential effect on travel patterns and diversions. However, VMT would increase slightly in Staten Island and the Bronx due to some drivers to and from New Jersey diverting around the Manhattan CBD to avoid paying the CBD toll. Tolling Scenarios D, E, and F, with higher discounts, exemptions and/or crossing credits would create the highest overall reduction in traffic entering and leaving the Manhattan CBD, but with higher potential changes in travel patterns and diversions to several highways.

Decreases and increases in traffic volumes due to diversions would occur near some environmental justice communities, depending on the tolling scenario. The environmental justice communities experiencing the largest increases in traffic volumes, including trucks, from circumferential diversions would be along I-95 in northern New Jersey and in Queens at the approach to the Robert F. Kennedy Bridge. Environmental justice communities experiencing the largest decreases in traffic volumes, including trucks, would be along the Long Island Expressway (I-495) in Queens, Hell's Kitchen in Manhattan (near the Lincoln Tunnel), and in areas of New Jersey south of the Lincoln Tunnel. Decreases would result primarily from traffic no longer traveling from Long Island through the Queens-Midtown Tunnel, across the Manhattan CBD, and through the Lincoln Tunnel into New Jersey.

---

<sup>90</sup> Regional air quality benefits apply to the 12-county air quality study area defined as the Bronx, Kings (Brooklyn), New York (Manhattan), Queens, Richmond (Staten Island), Nassau, Suffolk, Putnam, Rockland, Westchester, Hudson, and Bergen counties.

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

Shifts in traffic patterns, with increases in traffic at some locations and decreases at other locations, would change conditions at some local intersections within and near the Manhattan CBD. Of the intersections analyzed, most would see reductions in delay. Potential adverse effects on four local intersections in Manhattan would be addressed with signal timing adjustments, as described in **Section 4B.7 of Subchapter 4B, “Transportation: Highways and Local Intersections.”** **Section 10.3.2.2. of Chapter 10, “Air Quality,”** and **Appendix 10B, “Air Quality: Project-Level Hot-Spot Screening Procedure,”** provide a discussion of the air-quality screening for intersections and the finding that all intersections studied (including those in communities designated as environmental justice communities) passed NYSDOT carbon monoxide and particulate-matter screening.

**17D-6.1.1 Truck Traffic Effects**

As mentioned in **Section 17D-2**, exhaust from trucks, which has a higher level of particulate matter than automobile exhaust and has been associated with adverse health effects like cardiovascular and respiratory diseases, is a particular concern for many environmental justice populations. As explained in **Section 17D-2.1**, although all motor vehicles produce air pollutants, emissions from diesel-powered trucks are of particular concern to near-road air quality given that their exhaust contains toxic compounds that can be harmful to peoples’ health.<sup>91, 92</sup> Further, diesel-powered trucks emit more of certain pollutants per vehicle than other motor vehicles, and disproportionally contribute to traffic-related emissions.<sup>93, 94</sup>

Indeed, concerns about Project-generated increases in truck traffic in environmental justice communities were specifically raised during early outreach efforts and by commenters on the EA. Members of the Environmental Justice Technical Advisory Group for the Project requested additional information on the Project’s potential to increase the number of trucks on highways outside the Manhattan CBD, especially on the Cross Bronx Expressway in the South Bronx. Thus, special focus is given to truck traffic in this section. As with other traffic effects, regional modeling in the BPM is the basis for analysis and discussion of truck traffic effects.

The BPM analysis of truck trips assumed that deliveries would still be made to restaurants, businesses, and residents regardless of Project implementation. The BPM assumed that trip origins and destinations of trucks and other commercial vehicles would remain consistent across all the tolling scenarios. As a result, all modeled reductions in trucks into the Manhattan CBD would result from some through-trips diverting around the Manhattan CBD, balancing increased cost to access the Manhattan CBD and increased travel times to avoid the Manhattan CBD.

<sup>91</sup> USEPA. 2021. “Diesel Particulate Matter (PM) Air Toxics.” EnviroAtlas National Data Fact Sheet. January. <https://enviroatlas.epa.gov/enviroatlas/DataFactSheets/pdf/Supplemental/DieselPMairtoxics.pdf>.

<sup>92</sup> According to USEPA, exposure to diesel exhaust can lead to health conditions like asthma and respiratory illnesses and can worsen existing heart and lung disease, especially in children and the elderly. These conditions, in turn, can result in increased numbers of emergency room visits, hospital admissions, absences from work and school, and premature deaths.

<sup>93</sup> USEPA. 2014. “Near Roadway Air Pollution and Health: Frequently Asked Questions.” [US]EPA-420-F-14-044. August. <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100NFFD.PDF?Dockey=P100NFFD.PDF>. p. 3.

<sup>94</sup> Lattanzio, Richard. 2022. Heavy Duty Vehicles, Air Pollution, and Climate Change. Report IF12043. Washington, DC: Congressional Research Service. <https://crsreports.congress.gov/product/pdf/IF/IF12043>.

This section summarizes potential changes in truck volumes due to the Project using two related measures: daily truck trips or AADT and truck traffic proximity. USEPA notes that studies have found AADT, weighted inversely for distance, is a “good proxy for ambient air concentrations of NO<sub>x</sub>, PM<sub>2.5</sub>...black carbon or ultrafine PM [particulate matter].”<sup>95</sup> AADT is an input to the traffic proximity measure produced by USEPA and described in **Section 17D-4**. This Technical Memorandum presents a calculation of the Project’s potential change in truck traffic proximity using a formula similar to that used to create USEPA’s traffic proximity measure.

Here, the change in truck traffic proximity for each environmental justice census tract is equal to the difference between truck AADT on freeways and interstates in the CBD Tolling Alternative and the No Build Alternative, as forecasted in the BPM, within 300 meters (approximately 1,000 feet) of the population-weighted census tract centroid, divided by distance in meters.<sup>96</sup> Though EJScreen uses a 500-meter distance (approximately 1,600 feet) for calculating traffic proximity, the truck traffic proximity calculation presented here uses 300 meters (approximately 1,000 feet). This decision was based on the EJScreen technical documentation and a review of other studies that considered roadway proximity and pollution, including a recent report from the Urban Institute which states that after a literature review, the report authors’ “determined...that pollution is most likely to persist within closer boundaries.”<sup>97</sup>

### 17D-6.1.2 Potential Changes in Daily Truck Trips

**Figure 17D-11** presents the Project’s effect from some truck trips diverting around the Manhattan CBD under Tolling Scenario E on highways in the 10-county environmental justice study area. Truck diversions would occur in every tolling scenario, but Tolling Scenario E has the maximum truck diversions by volume for all census tracts in the 10-county environmental justice study area.<sup>98</sup> Tolling Scenario E would increase truck trips adjacent to census tracts in the South Bronx (Cross Bronx Expressway, Major Deegan Expressway, Bruckner Expressway), Upper Manhattan (Trans-Manhattan Expressway, RFK Bridge and I-278 over Randall’s Island), northern Queens (Brooklyn–Queens Expressway [BQE], Grand Central Parkway, Clearview and Whitestone Expressways), southwest Brooklyn (BQE), northern Staten Island (Staten Island

<sup>95</sup> USEPA. 2019. EJSCREEN Technical Documentation. [https://www.epa.gov/sites/default/files/2021-04/documents/ejscreen\\_technical\\_document.pdf](https://www.epa.gov/sites/default/files/2021-04/documents/ejscreen_technical_document.pdf). p. 52.

<sup>96</sup> The population-weighted centroids used are the Census 2010 centroids from the US Census Bureau, Centers of Population <https://www.census.gov/geographies/reference-files/time-series/geo/centers-population.2010.html#list-tab-XDA6VE8AT97QBO4ZE6>.

<sup>97</sup> USEPA. 2019. EJSCREEN Technical Documentation. [https://www.epa.gov/sites/default/files/2021-04/documents/ejscreen\\_technical\\_document.pdf](https://www.epa.gov/sites/default/files/2021-04/documents/ejscreen_technical_document.pdf). p. 50; Samuels, Gabe and Yonah Freemark. 2022. The Polluted Life Near the Highway: A review of national scholarship and a Louisville case study. The Urban Institute. <https://www.urban.org/sites/default/files/2022-11/The%20Polluted%20Life%20Near%20the%20Highway.pdf>. p 5; American Lung Association. 2022. Living Near Highways and Air Pollution. <https://www.lung.org/clean-air/outdoors/who-is-at-risk/highways>. November; Kim, Deajin, et. al. 2022. Dynamic grid-receptor method for regional-level near-road air quality analysis. *Environment*. 105. April. <https://doi.org/10.1016/j.trd.2022.103232>; Carter, Sarah A., et al. In utero exposure to near-roadway air pollution and autism spectrum disorder in children. *Environment International*. 158. January. <https://doi.org/10.1016/j.envint.2021.106898>

<sup>98</sup> Tracts with pre-existing air pollutant and chronic disease burdens that would benefit from reduced traffic, and those affected by increased traffic, would vary somewhat, but the identified communities throughout the remainder of the discussion in this Technical Memorandum remain largely the same across tolling scenarios. Under Tolling Scenario G, Fort Lee would not experience increases.



**Appendix 17D: Technical Memorandum –**

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

Expressway, 440), and Bergen County in New Jersey (I-95). The CBD Tolling Alternative (Tolling Scenario E) would decrease truck trips adjacent to environmental justice census tracts in the northern Bronx (I-87), central Queens (Long Island Expressway), and Bergen County in New Jersey (I-95 and I-78).

**17D-6.1.3 Potential Changes in Truck Traffic Proximity**

Using change in truck AADT between the No Action Alternative and the CBD Tolling Alternative on major roadways, it is possible to calculate change in truck traffic proximity for both environmental justice and non-environmental justice census tracts.

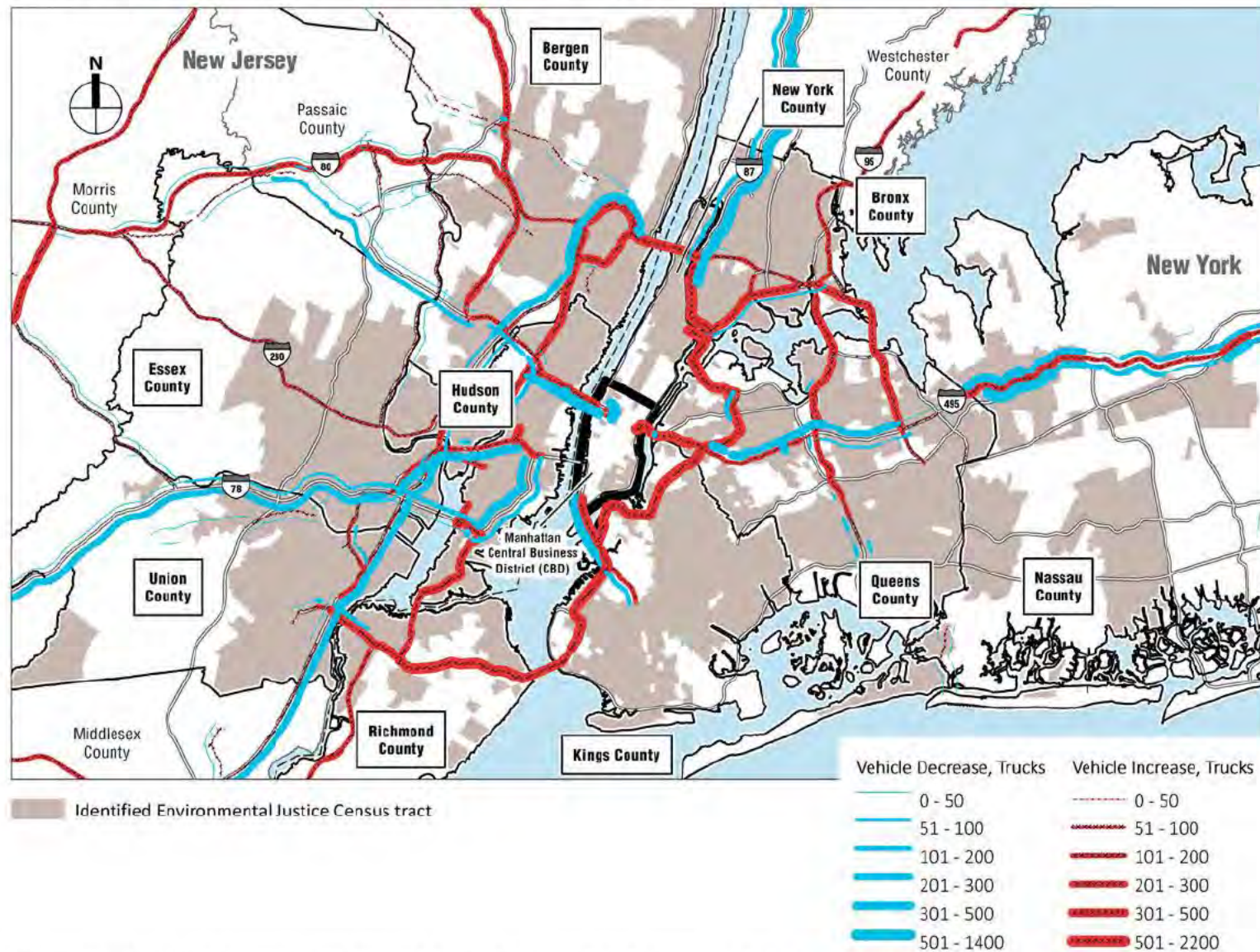
Traffic proximity is useful because, as a distance-weighted measure, it provides a way to describe a location's exposure to traffic from all directions while also considering the fact that traffic at a greater distance has less effect on that location than traffic that is close to that location. Traffic proximity sums together all AADT within the maximum search distance and then provides an average number of daily vehicles present at all points within that maximum search distance if the traffic were distributed at an even rate across space.<sup>99</sup>

**17D-6.1.4 Potential Changes in Truck Traffic in Environmental Justice Communities**

For reasons explained in **Section 17D-2.1**, this Technical Memorandum focuses primarily on truck traffic and uses 'truck traffic proximity' to gauge the magnitude of effects, consistent with the discussion above. **Figure 17D-12** depicts the potential changes in truck traffic proximity, both increases and decreases, as measured in "truck equivalents" and as explained in **Section 17D-6.2.2** above and the relevant footnote below; in this case, the truck equivalents are at 300 meters, where air pollutant effects related to roadway traffic are higher than the ambient air quality.

<sup>99</sup> The raw number, expressed as "daily vehicles/meters distance," is more difficult to understand on its own. As an example, imagine a census tract near two roadways that carry trucks, "Main Highway" and "Center Parkway." Main Highway is 200 meters away from the center of where the tract's residents live and Center Parkway is 120 meters away. Main Highway has truck AADT of 600 while Center Parkway has truck AADT of 1,200. Residents are exposed to the effects of traffic on both roadways but at different levels. The traffic proximity value for the tract is, thus,  $\left(\frac{600 \text{ truck AADT}}{200 \text{ meters}}\right) + \left(\frac{1,200 \text{ truck AADT}}{120 \text{ meters}}\right) = \left(\frac{3,600 \text{ truck AADT}}{1,200 \text{ meters}}\right) + \left(\frac{12,000 \text{ truck AADT}}{1,200 \text{ meters}}\right) = \left(\frac{15,600 \text{ truck AADT}}{1,200 \text{ meters}}\right)$  or 13.0 truck AADT per meter distance. To translate this figure back to the more commonly understood unit, number of trucks, one must multiply this 13.0 figure by a standard distance. A shorter distance (100 meters) will yield a smaller equivalent number of trucks (1,300) than a longer distance (300 meters yields 3,900 trucks). This is logical since a smaller number of trucks that is closer to a community will have more effect than a larger number of trucks at a greater distance.

Figure 17D-11. Potential Truck Volume Changes on Highways (Tolling Scenario E)

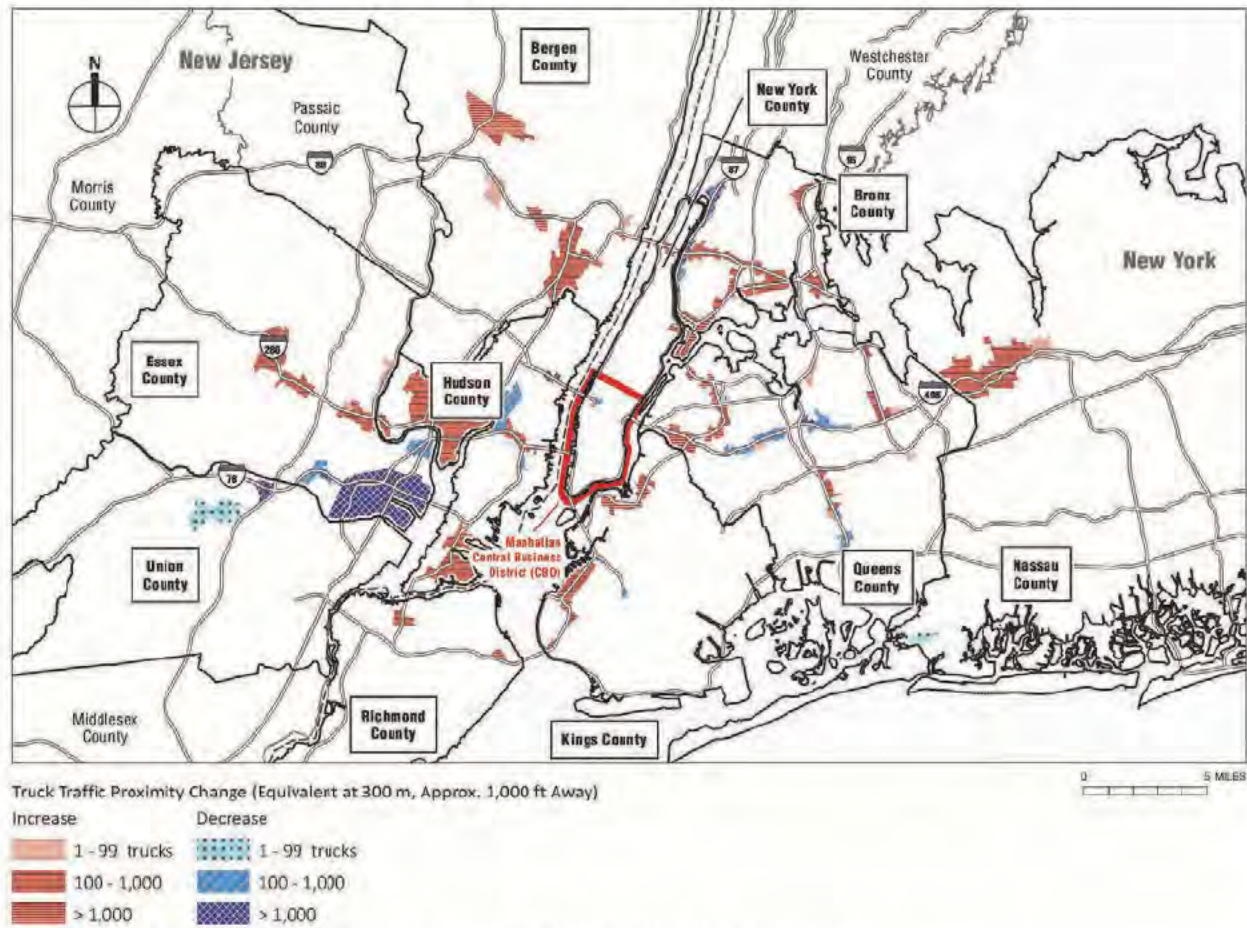


Source: Best Practice Model (BPM), WSP 2021; U.S. Census Bureau, ACS 2015-2019 5-Year Estimates used to identify environmental justice census tracts.



## Appendix 17D: Technical Memorandum –

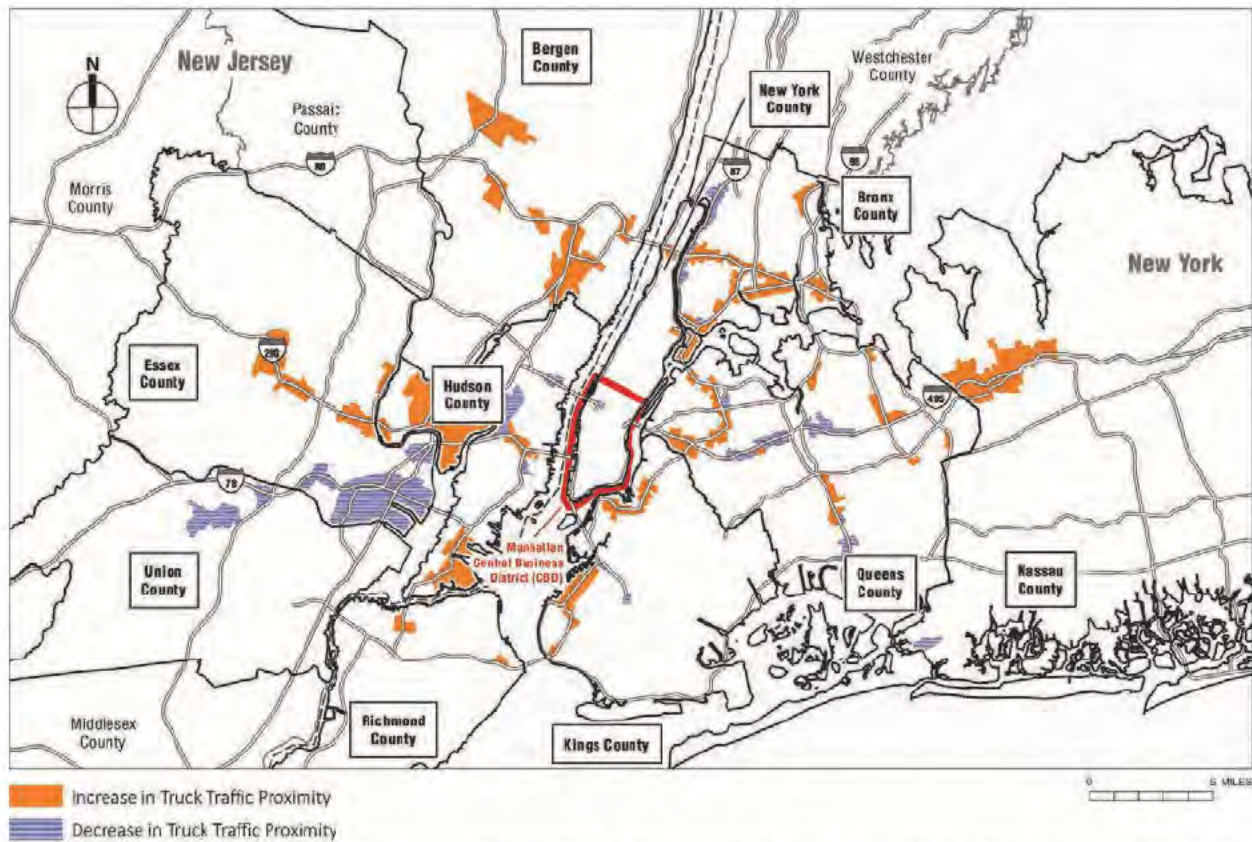
Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

**Figure 17D-12. Potential Truck Traffic Proximity Changes Over a 24-Hour Period in Environmental Justice Census Tracts (Tolling Scenario E)**

Source: BPM, WSP 2021; U.S. Census Bureau, ACS 2015-2019 5-Year Estimates.

All 210 tracts that could experience truck traffic increases or decreases under Tolling Scenario E have at least one pre-existing pollutant burden at or above the 80th national percentile or at least one pre-existing chronic-disease burden at or above the 66.66th national percentile. **Figure 17D-13** presents the environmental justice census tracts with at least one pre-existing pollutant burden at or above the 80th national percentile where truck traffic proximity could increase or decrease under Tolling Scenario E.

**Figure 17D-13. Environmental Justice Census Tracts with Pre-Existing Pollutant Indicators At or Above the 80th Percentile That Could Experience Truck Traffic Increases or Decreases (Tolling Scenario E)**



Source: USEPA National Air Toxics Assessment (NATA) 2017 and Agency Air Quality System 2018 via EJScreen 2021 data; BPM, WSP 2021.

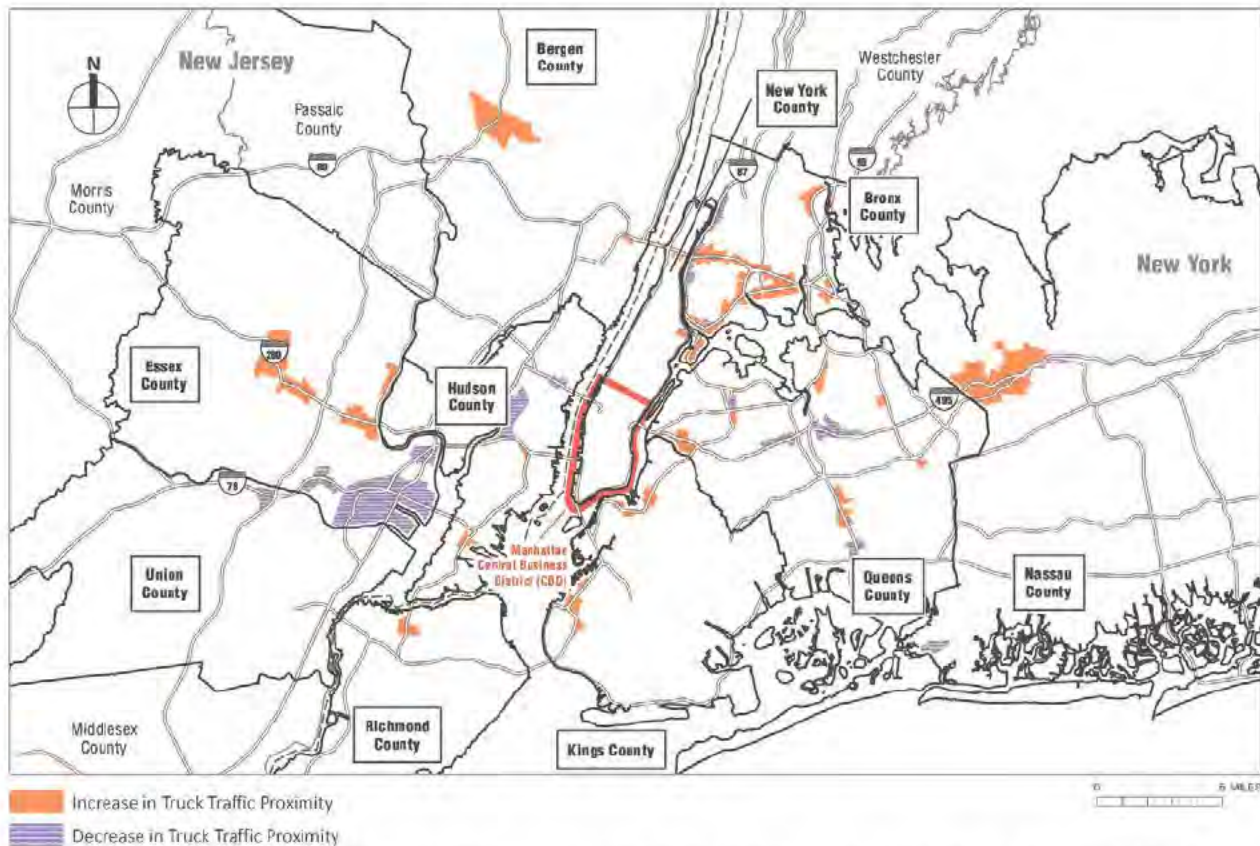
**Figure 17D-14** maps the environmental justice census tracts with at least one pre-existing chronic-disease burden at or above the 66.66th national percentile where truck traffic proximity could increase or decrease under Tolling Scenario E.



## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

**Figure 17D-14. Environmental Justice Census Tracts with Pre-Existing Chronic-Disease Indicators At or Above the 66.66th Percentile That Could Experience Truck Traffic Increases or Decreases (Tolling Scenario E)**

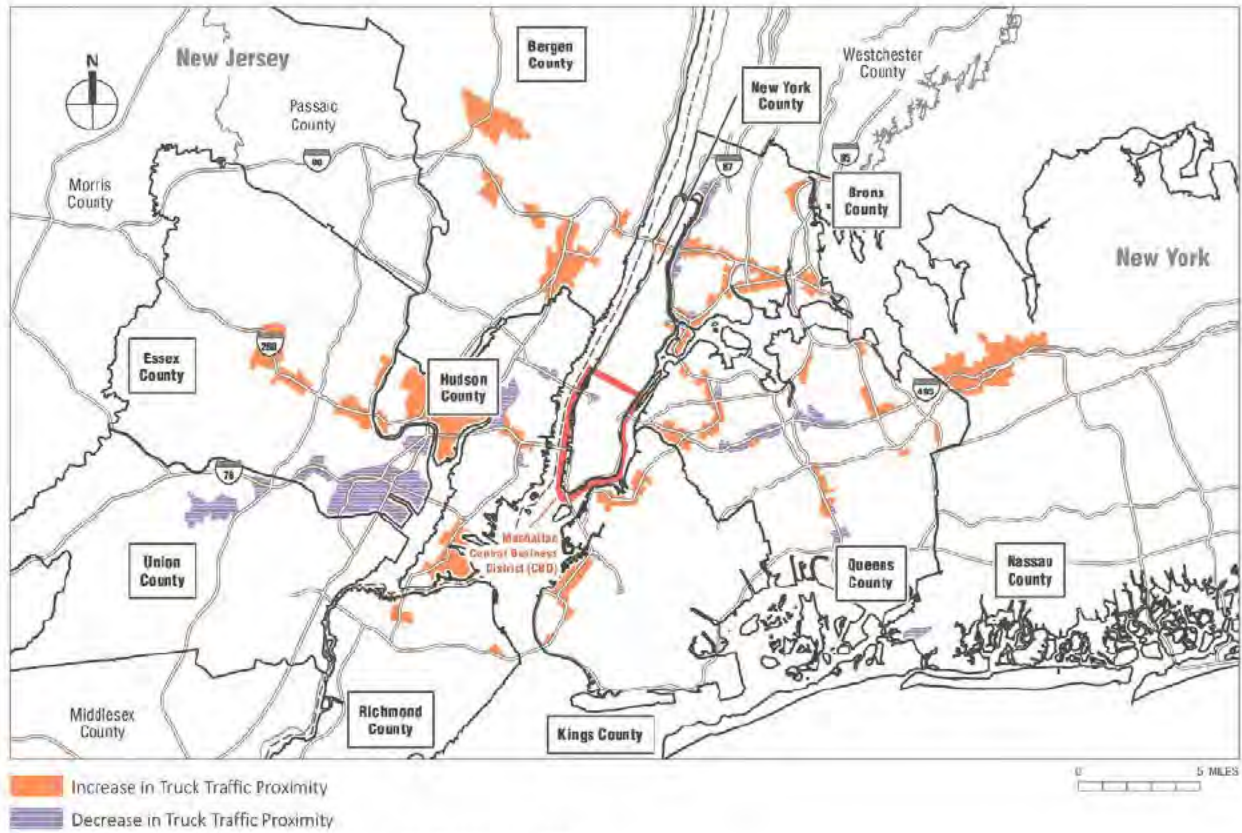


Source: U.S. Census Bureau, ACS 2015–2019 5-Year Estimates; USEPA NATA 2017 and Agency Air Quality System 2018 via EJScreen 2021 data; CDC PLACES Estimates 2020 via EJI 2022 data; BPM, WSP 2021.

Finally, **Figure 17D-15** depicts the environmental justice census tracts with either at least one pre-existing pollutant indicator at or above the 80th percentile or at least one pre-existing chronic disease indicator above the 66.66th percentile.<sup>100</sup>

<sup>100</sup> This section explores effects of the Project on pre-existing air pollutant and health burdens at the 80th and 66.66th percentiles. For the purposes of place-based mitigation, and in line with recent Federal guidance for investments in overburdened communities, the focus shifts later in the Technical Memorandum to the 90th percentile. However, and importantly, due to the nature of this region and the distribution of both environmental justice census tracts and the level of pre-existing burdens, the same census tracts are highlighted in **Figure 17D-15** and in **Figure 17D-18**. The regional-focused mitigation would benefit all of these census tracts by reducing truck diversions and reducing emissions from trucks traveling through the highway network.

**Figure 17D-15. Environmental Justice Census Tracts with Either Pre-Existing Pollutant Indicators At or Above the 80th Percentile or Pre-Existing Chronic-Disease Indicators At or Above the 66.66th Percentile That Could Experience Truck Traffic Increases or Decreases (Tolling Scenario E)**



Source: CDC PLACES Estimates 2020 via EJI 2022 data; BPM.

**Appendix 17D: Technical Memorandum –**

## Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

The same data in the preceding figures are also presented in **Tables 17D-9 and 17D-10**, which identify the municipalities (or, in New York City, neighborhoods<sup>101</sup>) where these tracts are located. Tracts are grouped by the number of pre-existing pollutant burdens at or above the 80th percentile or pre-existing chronic-disease burdens above the 66.66th percentile experienced by the people in those tracts. The tables also depict the varying baseline numbers of trucks travelling through or adjacent to these communities by including estimates of pre-existing AADT in truck volumes on some highways, as examples, that modeling anticipates would occur under the No Action Alternative.<sup>102</sup> The tables also describe the potential change in truck volumes under Tolling Scenario E, as well as what the change would represent as a percentage of the average annual daily truck volumes estimated for the No Action Alternative. **Table 17D-9** describes the communities that would see decreases in truck proximity and **Table 17D-10** describes the communities that would see increases. Truck diversions would occur in every tolling scenario. Tracts with pre-existing air pollutant and chronic disease burdens that would benefit from reduced traffic, and those affected by increased traffic would vary somewhat, but the identified communities remain largely the same across tolling scenarios. Under Tolling Scenario G, Fort Lee would not experience increases.

<sup>101</sup> The New York City neighborhood names are derived from the UHF names for the area and encompass multiple portions of the city that may be considered separate neighborhoods. Refer to NYC Environment and Health Data Portal for more information on UHF geographies. <https://a816-dohbesp.nyc.gov/IndicatorPublic/beta/data-stories/geographies/>

<sup>102</sup> In some cases, nearby roadways will show decreases in truck AADT when truck traffic proximity increases and vice versa. This occurs because of the distance weighting that is part of calculating changes in truck traffic proximity. A nearby roadway may show a net increase in truck traffic AADT, but the center of a census tract's population may be closer to a portion of the roadway with estimated decreases in truck volumes, meaning that exposure to emissions and truck traffic proximity decreases.



Table 17D-9. Environmental Justice Communities That Could Experience Truck Traffic Proximity Decreases (Tolling Scenario E)

COUNTY	COMMUNITY	NUMBER OF TRACTS BY NUMBER OF PRE-EXISTING POLLUTANT (80TH PERCENTILE) OR CHRONIC DISEASE BURDENS (66.66TH PERCENTILE)				HIGHWAY	DAILY TRUCK VOLUME		
		1-2	3-4	5-6	7		NO ACTION (AADT)	CHANGE (AADT)	CHANGE (%)
Bronx, NY	Crotona–Tremont			1	4	Major Deegan Expwy	15,042	-643	-4%
	Fordham–Bronx Park			1		Major Deegan Expwy	15,024	-686	-5%
	High Bridge–Morrisania			2	1	Major Deegan Expwy	11,872	-165	-1%
	Hunts Point–Mott Haven*			1		Bruckner Expwy	5,624	277	5%
	Kingsbridge–Riverdale		3	3	1	Major Deegan Expwy	14,679	-595	-4%
Kings, NY	Borough Park		1			Ocean Pkwy	5,689	-11	-0.2%
	Park Slope		1			Prospect Expwy	4,509	-12	-0.3%
New York, NY	Chelsea–Clinton		1			Lincoln Tunnel	2,069	-155	-7%
	Flushing–Clearview		2			Long Island Expwy	11,340	-290	-3%
Queens, NY	Fresh Meadows		2			Long Island Expwy	11,542	-283	-2%
	Jamaica			2		Van Wyck Expwy	7,487	-104	-1%
	Ridgewood–Forest Hills		4	1		Long Island Expwy	12,250	-153	-1%
	Southwest Queens			2		Van Wyck Expwy	5,039	-102	-2%
	West Queens		5	1		Brooklyn Queens Expwy East	2,303	-64	-3%
						Long Island Expwy	12,443	-170	-1%
Hudson, NJ	Jersey City		2			I-78	1,538	-580	-38%
						Pulaski Skwy	4,622	-142	-3%
	Union City		2	1		NJ 495	7,813	-703	-9%
Essex, NJ	Newark					I-78	13,535	-547	-4%
						I-95	12,573	-124	-1%
			2	1	6	McCarter Hwy	5,154	-23	-0.4%
						US 1-9	7,274	-30	-0.4%
						US 22	5,018	-24	-0.5%
Union, NJ	Union		2			I-78	8,569	-310	-4%
						US 22	4,289	-1	0.03%
Nassau, NY	Hempstead			1		Nassau Expwy	1,708	-2	-0.1%

Source: U.S. Census Bureau, ACS 2015–2019 5-Year Estimates; USEPA NATA 2017 and Agency Air Quality System 2018 via EJScreen 2021 data; CDC PLACES Estimates 2020 via EJ 2022 data; BPM, WSP 2021.

Note: \* Truck traffic proximity decreases in this census tract, even though AADT shows a net increase.

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

Table 17D-10. Environmental Justice Communities That Could Experience Truck Traffic Proximity Increases (Tolling Scenario E)

COUNTY	COMMUNITY	NUMBER OF TRACTS BY NUMBER OF PRE-EXISTING POLLUTANT (80TH PERCENTILE) OR CHRONIC DISEASE BURDENS (66.66TH PERCENTILE)				HIGHWAY	DAILY TRUCK VOLUME		
		1-2	3-4	5-6	7		No Action (AADT)	Change (AADT)	Change (%)
Bronx, NY	Crotona–Tremont			11	5	Cross Bronx Expwy	21,819	168	1%
	High Bridge–Morrisania			3	1	Cross Bronx Expwy	21,819	168	1%
	Hunts Point–Mott Haven		1	6	4	Major Deegan & Bruckner Expwys	7,618	874	11%
						Approach to RFK Bridge	9,868	1,339	14%
	Northeast Bronx			1		New England Thruway	13,640	191	1%
	Pelham–Throgs Neck		5	7	5	Cross Bronx Expwy Ext.	9,580	398	4%
						Throgs Neck Expwy	4,194	50	1%
						Bruckner Expwy	5,624	277	5%
Kings, NY	Bensonhurst–Bay Ridge		2			Gowanus Expwy	5,614	329	6%
	Downtown Brooklyn–Fort Greene		5		3	Brooklyn Queens Expwy	14,107	891	6%
	South Williamsburg		2	5		Brooklyn Queens Expwy	15,762	878	6%
	Sunset Park		13	2		Gowanus Expwy	5,031	310	6%
New York, NY	East Harlem			1	1	Approach to RFK Bridge	1,513	1,556	103%
	Randall's Island				1	RFK Bridge on Randall's Island	12,432	3,170	25%
	Washington Heights–Inwood		1	2		Trans-Manhattan Expwy	15,217	336	2%



COUNTY	COMMUNITY	NUMBER OF TRACTS BY NUMBER OF PRE-EXISTING POLLUTANT (80TH PERCENTILE) OR CHRONIC DISEASE BURDENS (66.66TH PERCENTILE)				HIGHWAY	DAILY TRUCK VOLUME		
		1-2	3-4	5-6	7		No Action (AADT)	Change (AADT)	Change (%)
Queens, NY	Bayside–Little Neck		5			Clearview Expwy	12,029	485	4%
	Flushing–Clearview		2			Clearview Expwy	14,332	631	4%
						Whitestone Expwy	7,118	378	5%
	Jamaica		2	2		Van Wyck Expwy	8,876	303	3%
	Long Island City–Astoria					Grand Central Pkwy	9,935	2,522	25%
			6	1		Brooklyn Queens Expwy	12,572	1,982	16%
						Long Island Expwy	4,446	217	5%
	Ridgewood–Forest Hills*		1			Long Island Expwy	11,851	(116)	-1%
	Southeast Queens**		2			Clearview Expwy	7,649	59	1%
Richmond, NY	Southwest Queens			2		Van Wyck Expwy	7,264	12	0.2%
	West Queens		9			Long Island Expwy	4,446	217	5%
						Brooklyn Queens Expwy	8,657	1,696	20%
	Port Richmond		2			MLK Expwy	3,023	339	11%
	Stapleton–St. George		1			Staten Island Expwy	4,354	403	9%
Bergen, NJ	Hackensack		1			I-80	15,034	208	1%
	Ridgefield Park Village		1			US-46	3,202	195	6%
	Fort Lee***					I-95	21,427	368	2%
			1	1		N Bergen Blvd	6,499	312	5%
						NJ Rt 4	12,413	35	0.3%
	Palisades Park		1			US 1-9-46	2,854	344	12%
	Lodi					I-80	9,976	164	2%
			1			NJ Rt 17	9,387	345	4%
						US-46	4,420	13	0.3%
	Paramus		1			NJ Rt 17	8,858	333	4%
						NJ Rt 4	7,300	3	0.04%
	Ridgefield					I-95	10,644	266	2%
			1			US-9	2,905	48	2%

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

COUNTY	COMMUNITY	NUMBER OF TRACTS BY NUMBER OF PRE-EXISTING POLLUTANT (80TH PERCENTILE) OR CHRONIC DISEASE BURDENS (66.66TH PERCENTILE)				HIGHWAY	DAILY TRUCK VOLUME		
		1-2	3-4	5-6	7		No Action (AADT)	Change (AADT)	Change (%)
Essex, NJ	East Orange				1	I-280	2,840	59	2%
	Newark			3	3	McCarter Hwy	6,381	17	0.3%
						I-280	6,425	117	2%
	West Orange		1			I-95	5,618	116	2%
	City of Orange				2	I-280	5,722	115	2%
Hudson, NJ	Bayonne		4			NJ Rt 440	7,432	443	6%
	Harrison		2			I-280	6,951	118	2%
	Jersey City		5			Tonnelle Ave	4,461	540	12%
						NJ Rt 139	3,571	207	6%
	Kearny		1			I-280	6,954	107	2%
						NJ Rt 9	11,481	359	3%
Nassau, NY	North Hempstead		2			Long Island Expwy	7,744	3	0.04%

Source: U.S. Census Bureau, ACS 2015-2019 5-Year Estimates; USEPA NATA 2017 and Agency Air Quality System 2018 via EJScreen 2021 data; CDC PLACES Estimates 2020 via EJ 2022 data; BPM, WSP 2021.

## Notes:

- \* Truck traffic proximity increases in this census tract, even though AADT shows a decrease.
- \*\* Census Tract 1571.02 shows a truck traffic proximity increase due to an increase of less than 1 truck per day on a Cross Island Parkway service road.
- \*\*\* Under Tolling Scenario G, Fort Lee would not experience increases.



**Table 17D-11** summarizes the changes in truck traffic proximity for the 434 census tracts in the 10-county environmental justice study area that are within 300 meters of a highway.<sup>103</sup>

**Table 17D-11. Summary of Project Effects on Truck Traffic Proximity (Tolling Scenario E)**

DIRECTION OF HIGHWAY TRUCK TRAFFIC PROXIMITY CHANGES	NUMBER OF TRACTS WITH PRE-EXISTING AIR POLLUTANT OR CHRONIC DISEASE BURDENS WITHIN 300 METERS OF A HIGHWAY			% OF COMMUNITY TYPE AFFECTED	
	Non- Environmental Justice	Environmental Justice	Total	Non- Environmental Justice	Environmental Justice
Decrease	23	56	79	19%	18%
No Change	49	101	150	40%	32%
Increase	51	154	205	41%	50%
<b>TOTAL</b>	<b>123</b>	<b>311</b>	<b>434</b>		

All of the 434 census tracts within 300 meters of a highway—both those that are environmental justice communities and those that are not—have at least one pollutant burden at or above the 80th national percentile or at least one chronic-disease burden above the 66.66th percentile, including the 284 census tracts that could experience decreases or increases in truck traffic proximity under Tolling Scenario E. The proportion of environmental justice census tracts existing within 300 meters of a highway (71.7 percent) mirrors the overall proportion of environmental justice census tracts in the 10-county environmental justice study area as a whole (70.6 percent).

Increases in truck traffic in currently overburdened communities, relative to national percentiles, would constitute an adverse effect. The effects would vary in magnitude depending on the additional volume of truck traffic and the extent of pre-existing pollutant and chronic disease burdens. As can be seen in **Table 17D-11**, a larger number of census tracts identified as environmental justice tracts (56) would experience reduced truck traffic proximity when compared to non-environmental justice tracts (23); in essence, more environmental justice tracts than non-environmental census tracts would benefit from Project-related reductions in truck traffic. Further, roughly the same proportion of environmental justice and non-environmental justice communities would see decreases in traffic truck proximity related to the Project. However, while 41 percent of non-environmental justice census tracts would experience increases in truck traffic proximity, 50 percent of environmental justice census tracts would experience increases that would not be completely alleviated by the overall beneficial effects of the Project.

### 17D-6.1.5 Non-Truck Traffic

Given the concern regarding truck traffic, as described in **Sections 17D-2.1 and 17D-6.2**, this Technical Memorandum focuses primarily on truck traffic. However, to ensure that all potential effects are identified, and given that all motor vehicles powered by internal combustion engines produce some air pollutants, this section looks at whether highway non-truck traffic increases could occur in areas where highway truck

<sup>103</sup> The table excludes 10 census tracts with an estimated population of zero and does not include those census tracts beyond 300 meters of a highway.

**Appendix 17D: Technical Memorandum –**

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

traffic would either decrease or not change under the CBD Tolling Scenario. Because Tolling Scenario E was used to explore changes in truck traffic proximity, that same tolling scenario was used to identify any differences in diversionary patterns between trucks and non-truck vehicles.

The Project Sponsors began by calculating the change in non-truck traffic proximity, using the method described in **Section 17D-6.2**, for the census tracts in the 10-county environmental justice study area under Tolling Scenario E. Then, by comparing the results of this analysis with the earlier analysis of highway truck traffic proximity, it was possible to see whether there are environmental justice-designated census tracts where highway non-truck traffic increases could occur without truck traffic increases.

Across the environmental justice study region, 39 communities had one or more tracts with at least one pre-existing air pollutant burden at or above the 80th national percentile or at least one pre-existing chronic disease burden above the 66.66th national percentile where non-truck traffic proximity could decrease under Tolling Scenario E. Meanwhile, 20 communities had one or more tracts with these levels of pre-existing burdens where non-truck traffic proximity could increase under Tolling Scenario E but where modeling indicates truck traffic proximity would decrease or not change. Some of these tracts are adjacent to parkways with truck restrictions, but others are adjacent to highways where truck traffic proximity would decrease while non-truck traffic proximity would increase. **Table 17D-12** identifies these communities. The table also depicts, separately, the baseline numbers of non-trucks and trucks travelling through or adjacent to these communities by including estimates of AADT on some highways under the No Action Alternative, as well as the potential change in both truck and non-truck volumes under Tolling Scenario E.

Notably, 11 of these communities are already identified in **Table 17D-10**, as they contain other census tracts that could experience truck traffic proximity increases under Tolling Scenario E. The remaining 9 communities not previously identified are highlighted in the table using bold font. Of these, 4 have highways where trucks are permitted but where truck traffic AADT is predicted to decrease or stay unchanged under Tolling Scenario E. Highways with truck restrictions and potential non-truck traffic increases traverse the remaining 5 communities.

**Table 17D-12. Environmental Justice Communities That Could Experience Non-Truck Traffic Proximity Increases without Truck Traffic Proximity Increases (Tolling Scenario E)**

COUNTY	COMMUNITY	NUMBER OF TRACTS BY NUMBER OF PRE-EXISTING POLLUTANT (80 <sup>TH</sup> PERCENTILE) OR CHRONIC DISEASE BURDENS (66.66 <sup>TH</sup> PERCENTILE)				HIGHWAY	DAILY NON-TRUCK VOLUME			DAILY TRUCK VOLUME		
		1-2	3-4	5-6	7		NO ACTION (AADT)	CHANGE (AADT)	CHANGE (%)	NO ACTION (AADT)	CHANGE (AADT)	CHANGE (%)
Bronx, NY	Fordham–Bronx Park			2	1	Bronx River Pkwy	95,743	-26	0.0%	0	0	
						Mosholu Pkwy	49,364	183	0.4%	0	0	
	Kingsbridge–Riverdale*		1			Henry Hudson Pkwy	52,188	-2,013	-3.9%	0	0	
						Major Deegan Pkwy	137,804	-2,620	-1.9%	13,007	-642	-4.9%
						Mosholu Pkwy	70,125	-631	-0.9%	0	0	
						Bronx River Pkwy	82,916	234	0.3%	0	0	
	Northeast Bronx**			2	3	Hutchinson River Pkwy	139,000	-132	-0.1%	0	0	
						New England Thruway	114,329	-2,330	-2.0%	18,923	237	1.3%
						Bronx River Pkwy	88,312	158	0.2%	0	0	
Kings, NY	Park Slope		1			Brooklyn Queens Expwy	121,184	8,156	6.7%	15,661	639	4.1%
						Prospect Expwy	57,312	2,202	3.8%	3,187	-9	-0.3%
	East New York			1		Jackie Robinson Pkwy	87,492	1,440	1.6%	0	0	
New York, NY	Lower Manhattan				1	FDR Dr	44,052	5,755	13.1%	0	0	
	Lower East Side			3	1	FDR Dr	107,507	7,672	7.1%	0	0	
Queens, NY	Flushing–Clearview		1			Cross Island Pkwy	110,139	295	0.3%	0	0	
	Jamaica***			1		Belt Pkwy	155,884	-617	-0.4%	0	0	
						JFK Expwy	34,513	7	0.0%	0	0	
						Nassau Expwy	66,009	-1,023	-1.5%	287	6	2.1%
						Van Wyck Expwy	159,528	-138	-0.1%	5,941	-77	-1.3%
	Ridgewood–Forest Hills		2			Jackie Robinson Pkwy	117,227	553	0.5%	0	0	
	Southeast Queens			2		Belt Pkwy	157,617	53	0.0%	0	0	



## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

COUNTY	COMMUNITY	NUMBER OF TRACTS BY NUMBER OF PRE- EXISTING POLLUTANT (80 <sup>TH</sup> PERCENTILE) OR CHRONIC DISEASE BURDENS (66.66 <sup>TH</sup> PERCENTILE)				HIGHWAY	DAILY NON-TRUCK VOLUME			DAILY TRUCK VOLUME		
		1-2	3-4	5-6	7		NO ACTION (AADT)	CHANGE (AADT)	CHANGE (%)	NO ACTION (AADT)	CHANGE (AADT)	CHANGE (%)
						Cross Island Pkwy	136,974	-41	0.0%	7	0	0.0%
						Hook Creek Blvd	3,356	26	0.8%	47	0	0.0%
	Southwest Queens			1		Belt Pkwy	167,960	-1,855	-1.1%	0	0	
						Van Wyck Expwy	132,116	534	0.4%	4,268	-139	-3.3%
	West Queens		1			Long Island Expwy	184,144	1,108	0.6%	13,003	-201	-1.5%
Essex, NJ	Belleville†		1			NJ Rt 21	45,515	525	1.2%	5,499	15	0.3%
	East Oranget††				3	Garden State Pkwy	108,539	1,296	1.2%	0	0	
						I-280	95,485	-1,958	-2.1%	4,329	70	1.6%
	Irvington			1	5	Garden State Pkwy	121,204	1,475	1.2%	0	0	
	Newark				1	Garden State Pkwy	128,342	1,279	1.0%	0	0	
Hudson, NJ	Jersey City†††		1			NJ Tpke Ext	35,435	-2,296	-6.5%	1,538	-580	-37.7%
Union, NJ	Elizabeth†††			2		I-95	115,637	-1,415	-1.2%	22,498	-109	-0.5%
Nassau, NY	Hempstead			1		Cross Island Pkwy	141,039	-227	-0.2%	0	0	
						Nassau Expwy	64,528	117	0.2%	1,719	-2	-0.1%

Source: U.S. Census Bureau, ACS 2015–2019 5-Year Estimates; USEPA NATA 2017 and Agency Air Quality System 2018 via EJScreen 2021 data; CDC PLACES Estimates 2020 via EJI 2022 data; BPM, WSP 2021.

## Notes:

- \* Includes Census Tract 435, Bronx County. Closer examination indicates that this tract is predicted to have an increase in non-truck traffic proximity under Tolling Scenario E; though highways passing through the tract are predicted to see decreases in non-truck traffic, the center of its population is near a highway where modeling indicates that non-truck traffic could increase.
- \*\* Includes Census Tract 302, Bronx County. Closer examination indicates that this tract is predicted to have an increase in non-truck traffic proximity under Tolling Scenario E; though highways passing through the tract are predicted to see decreases in non-truck traffic, the center of its population is near a highway where modeling indicates that non-truck traffic could increase.
- \*\*\* Includes Census Tract 306, Queens County. Closer examination indicates that this tract is predicted to have an increase in non-truck traffic proximity under Tolling Scenario E; though highways passing through the tract are predicted to see decreases in non-truck traffic, the center of its population is near a highway where modeling indicates that non-truck traffic could increase.

- † The small potential increase in truck traffic produces a potential truck-traffic proximity change of less than one truck per meter distance in Census Tract 144, Essex County.
- †† Closer examination indicates that these tracts are predicted to have an increase in non-truck traffic proximity under Tolling Scenario E; though one highway passing through these tracts are predicted to see decreases in non-truck traffic, the centers of their population are closer to a highway where modeling indicates that non-truck traffic could increase.
- ††† Non-truck traffic proximity is predicted to increase in these census tracts, even though AADT is predicted to decrease.

**Appendix 17D: Technical Memorandum –**

## Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

Given that an analysis of potential highway non-truck traffic proximity increases under Tolling Scenario E revealed some communities that were not identified through the highway truck traffic analysis, the Project Sponsors considered whether another tolling scenario would be more appropriate for understanding the range of non-truck traffic increases under the Project. As described in **Section 17D-6.2.1**, Tolling Scenario E was selected for highway truck traffic analysis since it is the scenario with the maximum truck diversions by volume for all census tracts in the 10-county environmental justice study area. Modeled traffic results from the BPM indicated that Tolling Scenario G is the scenario with the largest potential increases in non-truck traffic across the environmental justice-designated census tracts in the 10-county environmental justice study area.

Modeling indicates that under Tolling Scenario G, 35 communities across the region have at least one census tract with at least one pre-existing air pollutant burden at or above the 80th national percentile or at least one pre-existing chronic disease burden above the 66.66th national percentile where highway non-truck traffic proximity could decrease. At the same time, 33 communities across the region have at least one census tract with at least one pre-existing air pollutant burden at or above the 80th national percentile or at least one pre-existing chronic disease burden above the 66.66th national percentile where highway non-truck traffic proximity could increase while truck traffic proximity would either remain unchanged or decrease. However, all but 11 of these communities are also identified in **Table 17D-10**, as they could experience increases in truck traffic proximity under Tolling Scenario E. Of these 11 communities, 3 have highways where trucks are permitted, and where highway truck traffic would decrease; the remaining 8 are adjacent to highways with truck restrictions in place.

**Table 17D-13** identifies these communities and highlights the communities not previously identified using bold font.

This analysis of non-truck highway traffic effects identified that certain areas within communities could experience decreases in non-truck traffic while others could experience increases. For those that could experience increases, in some cases they are in the same locations where there would be simultaneous decreases in highway truck traffic, and the disproportionate emissions from diesel-powered trucks.<sup>104, 105</sup>

<sup>104</sup> USEPA. 2014. "Near Roadway Air Pollution and Health: Frequently Asked Questions." [US]EPA-420-F-14-044. August. <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100NFFD.PDF?Dockey=P100NFFD.PDF>. p. 3

<sup>105</sup> Lattanzio, Richard. 2022. Heavy Duty Vehicles, Air Pollution, and Climate Change. Report IF12043. Washington, DC: Congressional Research Service. <https://crsreports.congress.gov/product/pdf/IF/IF12043>



**Table 17D-13. Environmental Justice Communities That Could Experience Non-Truck Traffic Proximity Increases without Truck Traffic Proximity Increases (Tolling Scenario G)**

COUNTY	COMMUNITY	NUMBER OF TRACTS BY NUMBER OF PRE-EXISTING POLLUTANT (80TH PERCENTILE) OR CHRONIC DISEASE BURDENS (66.66TH PERCENTILE)				HIGHWAY	DAILY NON-TRUCK VOLUME			DAILY TRUCK VOLUME		
		1-2	3-4	5-6	7		NO ACTION (AADT)	CHANGE (AADT)	CHANGE (%)	NO ACTION (AADT)	CHANGE (AADT)	CHANGE (%)
Bronx, NY	Crotona–Tremont			9	5	Cross Bronx Expwy	129,551	2,822	2.2%	21,819	-97	-0.4%
	High Bridge–Morrisania			2		Cross Bronx Expwy	129,551	2,822	2.2%	21,819	-97	-0.4%
	Fordham–Bronx Park			7	1	Bronx River Pkwy	95,743	316	0.3%	0	0	
						Mosholu Pkwy	49,364	291	0.6%	0	0	
	Kingsbridge–Riverdale*		1	1		Henry Hudson Pkwy	52,188	-1,338	-2.6%	0	0	
						Major Deegan Expwy	137,804	-1,650	-1.2%	13,007	-250	-1.9%
						Mosholu Pkwy	70,125	-125	-0.2%	0	0	
						Bronx River Pkwy	88,312	502	0.6%	0	0	
	Northeast Bronx			1	3	Bronx River Pkwy	88,312	502	0.6%	0	0	
	Pelham–Throgs Neck		2	3		Cross Bronx Expwy Ext	67,348	2,945	4.4%	9,580	-597	-6.2%
Kings, NY	Bensonhurst–Bay Ridge		6	1		Belt Pkwy	102,954	215	0.2%	0	0	
						Brooklyn Queens Expwy	53,564	2,128	4.0%	5,498	-23	-0.4%
	Canarsie–Flatlands		1	1	-	Belt Pkwy	126,307	432	0.3%	0	0	
	Coney Island–Sheepshead Bay		7		-	Belt Pkwy	118,945	930	0.8%	0	0	
	Downtown Brooklyn–Fort Greene				1	Brooklyn Queens Expwy	121,184	3,341	2.8%	15,661	-2	0.0%
	East New York			1		Jackie Robinson Pkwy	87,492	538	0.6%	0	0	
	Sunset Park			1		Brooklyn Queens Expwy	69,822	1,807	2.6%	5,310	-41	-0.8%

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

COUNTY	COMMUNITY	NUMBER OF TRACTS BY NUMBER OF PRE- EXISTING POLLUTANT (80TH PERCENTILE) OR CHRONIC DISEASE BURDENS (66.66TH PERCENTILE)				HIGHWAY	DAILY NON-TRUCK VOLUME			DAILY TRUCK VOLUME		
		1-2	3-4	5-6	7		NO ACTION (AADT)	CHANGE (AADT)	CHANGE (%)	NO ACTION (AADT)	CHANGE (AADT)	CHANGE (%)
New York, NY	Central Harlem–Morningside Heights			2	1	Harlem River Dr	122,662	1,037	0.8%	0	0	
	Lower Manhattan				1	FDR Dr	44,052	3,137	7.1%	0	0	
	Lower East Side			3	1	FDR Dr	107,507	8,150	7.6%	0	0	
	Washington Heights–Inwood		3	3		Harlem River Dr	127,595	1,501	1.2%	0	0	
						Henry Hudson Pkwy	134,766	1,123	0.8%	0	0	
						Trans-Manhattan Expwy	109,337	4,358	4.0%	15,217	336	2.2%
Queens, NY	Bayside–Little Neck**			1		Cross Island Pkwy	112,716	297	0.3%	0	0	
						Grand Central Pkwy	102,314	77	0.1%	0	0	
						I-495	184,569	-2,145	-1.2%	17,565	9	0.1%
	Flushing–Clearview		2			Cross Island Pkwy	110,139	282	0.3%	0	0	
						Whitestone Expwy	163,532	1,054	0.6%	8,127	77	0.9%
	Jamaica***			2		Belt Pkwy	155,884	-165	-0.1%	0	0	
						JFK Expwy	34,513	-262	-0.8%	0	0	
						Nassau Expwy	66,009	-977	-1.5%	287	7	2.4%
						Van Wyck Expwy	159,528	751	0.5%	5,941	-54	-0.9%
	Ridgewood–Forest Hills		2			Jackie Robinson Pkwy	117,227	512	0.4%	0	0	
	Southeast Queens			3		Belt Pkwy	157,617	583	0.4%	0	0	
						Cross Island Pkwy	136,974	526	0.4%	7	0	0.0%
						Hook Creek Blvd	3,356	-19	-0.6%	47	0	0.0%
	Southwest Queens		1	2		Belt Pkwy	167,960	841	0.5%	0	0	
						Nassau Expwy	32,379	-910	-2.8%	23	-1	-4.3%
						Van Wyck Expwy	132,116	-535	-0.4%	4,268	-132	-3.1%



COUNTY	COMMUNITY	NUMBER OF TRACTS BY NUMBER OF PRE- EXISTING POLLUTANT (80TH PERCENTILE) OR CHRONIC DISEASE BURDENS (66.66TH PERCENTILE)				HIGHWAY	DAILY NON-TRUCK VOLUME			DAILY TRUCK VOLUME		
		1-2	3-4	5-6	7		NO ACTION (AADT)	CHANGE (AADT)	CHANGE (%)	NO ACTION (AADT)	CHANGE (AADT)	CHANGE (%)
	West Queens		3			Grand Central Pkwy	109,447	859	0.8%	0	0	
Richmond, NY	Port Richmond		1			Dr M.L.K. Jr Expwy	20,594	2,724	13.2%	3,384	10	0.3%
Bergen, NJ	Fort Lee		1	1		I-95	136,411	9,431	6.9%	23,532	-141	-0.6%
						Palisades Interstate Pkwy	64,897	1,616	2.5%	0	0	
						US 46	46,580	3,170	6.8%	4,399	18	0.4%
	Hackensack		1			I-80	123,505	4,645	3.8%	15,059	-236	-1.6%
	Palisades Park		1			US 46	44,323	2,408	5.4%	3,591	-37	-1.0%
	Ridgefield		1			Broad Ave	24,791	720	2.9%	3,745	-2	-0.1%
						I-95	54,652	5,209	9.5%	8,740	-75	-0.9%
						US 46	64,146	2,390	3.7%	4,273	-37	-0.9%
Essex, NJ	East Orange†				3	Garden State Pkwy	108,539	1,252	1.2%	0	0	
						I-280	95,485	-1,934	-2.0%	4,329	105	2.4%
	Irvington			1	5	Garden State Pkwy	121,204	1,128	0.9%	0	0	
	Newark				1	Garden State Pkwy	128,342	1,126	0.9%	0	0	
Union, NJ	Elizabeth††		1	2		I-95	115,637	-379	-0.3%	22,498	-43	-0.2%
Nassau, NY	Hempstead		1	1		Cross Island Pkwy	141,039	149	0.1%	0	0	
						Nassau Expwy	64,528	6	0.0%	1,719	-1	-0.1%

Source: U.S. Census Bureau, ACS 2015-2019 5-Year Estimates; USEPA NATA 2017 and Agency Air Quality System 2018 via EJScreen 2021 data; CDC PLACES Estimates 2020 via EJI 2022 data; BPM, WSP 2021.

Notes:

- \* Includes Census Tract 435, Bronx County. Closer examination indicates that this tract is predicted to have an increase in non-truck traffic proximity under Tolling Scenario G; though highways passing through the tract are predicted to see decreases in non-truck traffic, the center of its population is near a highway where modeling indicates that non-truck traffic could increase.



**Appendix 17D: Technical Memorandum –**

## Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

- \*\* Census Tract 1385.02, Queens County. Closer examination indicates that this tract is predicted to have an increase in non-truck traffic proximity under Tolling Scenario G; though highways passing through the tract are predicted to see decreases in non-truck traffic, the center of its population is near a highway where modeling indicates that non-truck traffic could increase.
- \*\*\* Includes Census Tract 306, Queens County. Closer examination indicates that this tract is predicted to have an increase in non-truck traffic proximity under Tolling Scenario G; though highways passing through the tract are predicted to see decreases in non-truck traffic, the center of its population is near a highway where modeling indicates that non-truck traffic could increase.
- † Closer examination indicates that these tracts are predicted to have an increase in non-truck traffic proximity under Tolling Scenario G; though one highway passing through these tracts are predicted to see decreases in non-truck traffic, the centers of their population are closer to a highway where modeling indicates that non-truck traffic could increase.
- †† Non-truck traffic proximity is predicted to increase in these census tracts, even though AADT is predicted to decrease.

## 17D-7. Mitigation

The CEQ released the CEJST in 2022. Developed pursuant to Executive Order 14008, the tool is designed to focus investments; to “help identify disadvantaged communities that will benefit from programs included in the Justice40 Initiative” which “seeks to deliver 40 percent of the overall benefits of investments in climate, clean energy, and related areas to disadvantaged communities.”

Like other environmental justice screening tools, CEJST ranks indicators for each census tract into percentiles, comparing the values for each indicator to the same value for all other census tracts in the United States. CEJST uses a 90th percentile threshold for pollutant and health burdens in combination with a separate threshold for the share of residents with incomes below twice the Federal poverty level to identify communities as “disadvantaged.”<sup>106</sup>

Given that CEQ designed CEJST to guide benefits and investments, the Project Sponsors determined that it would be appropriate to follow CEJST’s methodology for identifying communities for mitigation to address Project effects, notably those communities in the 10-county environmental justice study area that are at or above the 90th percentile for either pre-existing pollutant or chronic disease burdens, and which may also experience increases in truck traffic proximity as a result of the Project.

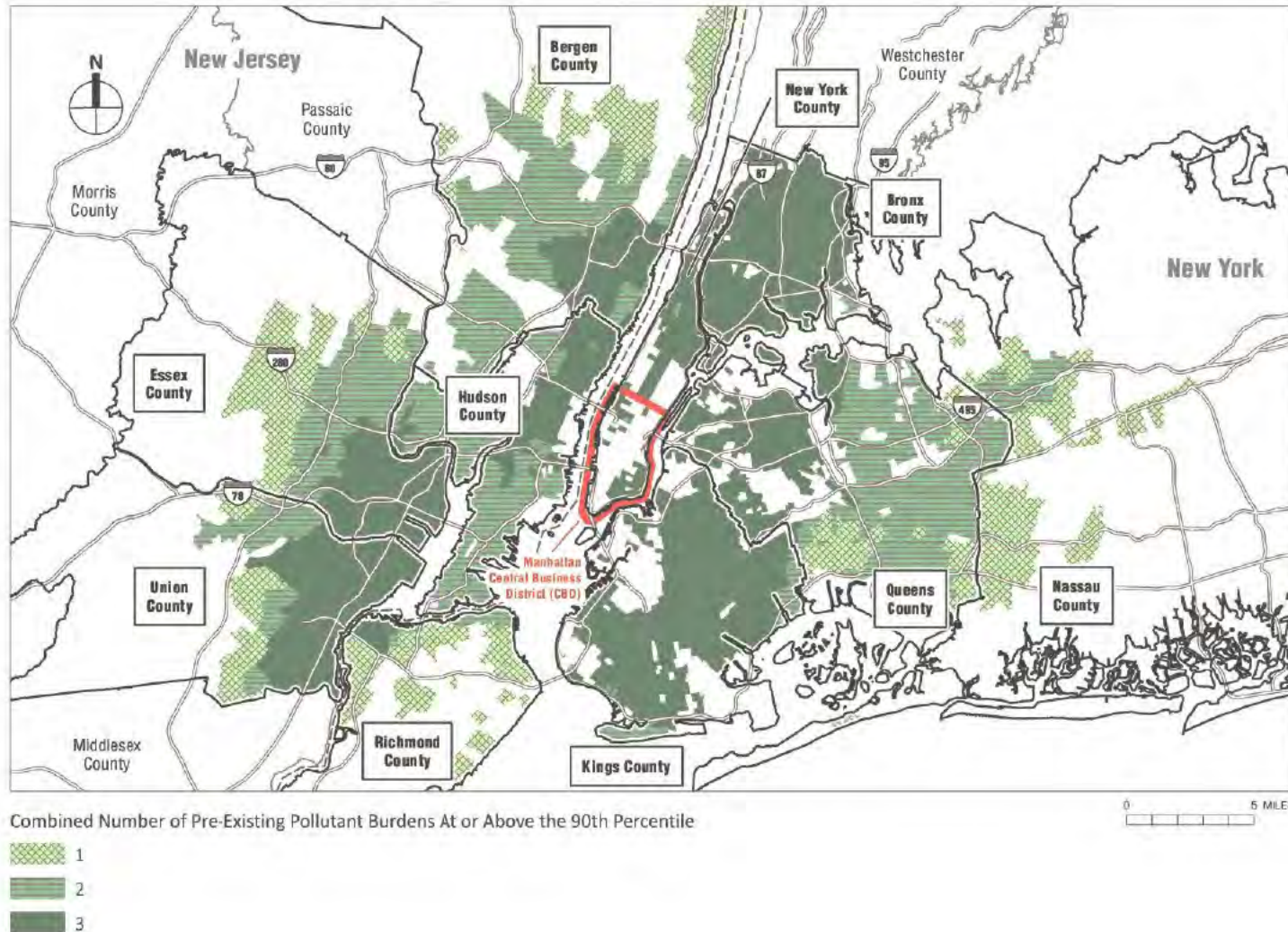
**Figure 17D-16** depicts the census tracts with at least one pre-existing pollutant burden at or above the 90th percentile and indicates the number of burdens that each tract experiences at those levels. **Figure 17D-17** provides the same information for the pre-existing chronic-disease burdens included. As shown in **Figure 17D-16**, the communities most overburdened by pre-existing air pollutants, relative to national percentiles, include most of Bronx County, northern Manhattan (New York County), and portions of Kings and Queens Counties in New York and portions of eastern Bergen, Essex, Hudson, and Union Counties in New Jersey. **Figure 17D-17**, which identifies census tracts with pre-existing chronic-disease burdens that exceed the 90th national percentile, shows that these areas are concentrated in Bronx County, northern Manhattan (New York County); portions of Kings, Queens, and eastern Essex Counties; and in select areas in Richmond County, Hudson, and Union Counties.

<sup>106</sup> Refer to White House Council on Environmental Quality (CEQ). “Climate and Economic Justice Screening Tool: Methodology.” <https://screeningtool.geoplatform.gov/en/methodology#3/33.47/-97.5>. As briefly described in **Section 17D-1** and detailed in **Appendix 17A, “Environmental Justice: Methodology,”** the share of residents below twice the poverty level was also used to identify environmental justice communities for the EA and the analysis presented here.

## Central Business District (CBD) Tolling Program Environmental Assessment

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

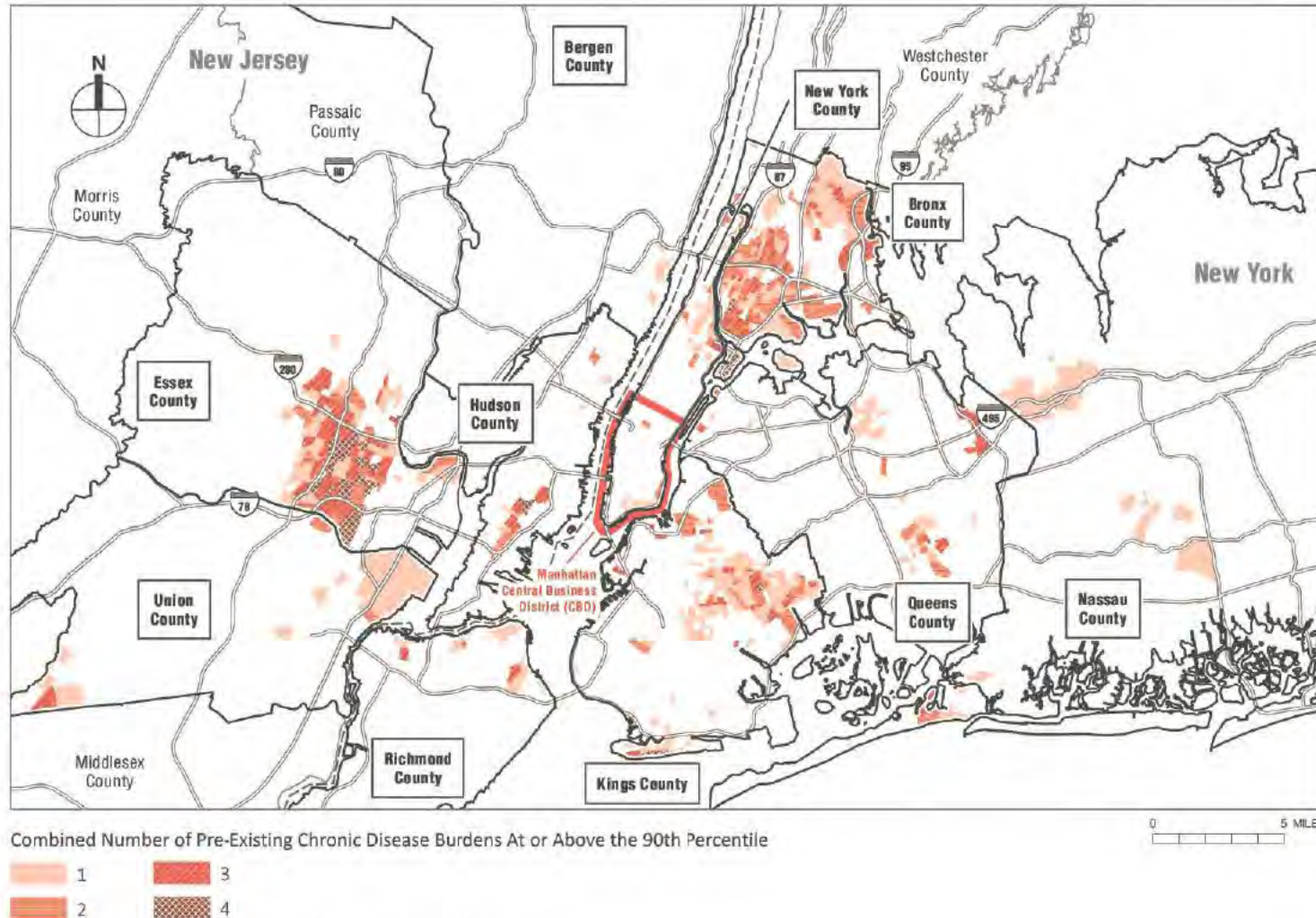
**Figure 17D-16. Environmental Justice Designated Census Tracts with One or More Pre-Existing Pollutant Exposure Burdens at or Above the 90th National Percentile**

Source: USEPA NATA 2017 and Agency Air Quality System 2018 via EJScreen 2021 data.

Note: Percentiles are national; though four pre-existing pollutant indicators were included in analysis, no tract is at or above the 90th percentile for all four.



**Figure 17D-17. Environmental Justice Designated Census Tracts with Pre-Existing Chronic Disease Burdens at or Above the 90th National Percentile**



Source: CDC PLACES Estimates 2020 via EJI 2022 data.

Note: Percentiles are national; though four pre-existing pollutant indicators were included in analysis, no tract is at or above the 90th percentile for all five.

**Appendix 17D: Technical Memorandum –**

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

The analysis shows truck traffic could increase in environmental justice census tracts with either pre-existing pollutant or chronic-disease burdens at or above the 90th percentile located along major regional highways (e.g., I-95, I-278, and I-495) or at the approaches to major bridges (e.g., the George Washington, Robert F. Kennedy, and Verrazzano-Narrows Bridges). Census tracts at or above the 90th percentile for pollutants or chronic disease burdens that would experience a decrease in truck traffic are primarily located along roadways leading to the Manhattan CBD (e.g., I-78 and I-495).<sup>107</sup>

**Table 17D-12** describes the communities with census tracts that would see decreases in truck traffic proximity. Tracts are grouped by the number of pre-existing pollutant or chronic-disease burdens experienced by the people in those tracts at or above the 90th percentile. As with the tables in **Section 17D-6.2.3**, **Table 17D-12** provides data about some of the adjacent roadways where truck volume decreases could occur, including estimates of average annual daily truck volumes (AADT) on highways that modeling anticipates would occur under the No Action Alternative, modeled changes in truck AADT, and the percentage that this change would represent from the No Action Alternative.

---

<sup>107</sup> Of note, due to the nature of this region and the distribution of both environmental justice census tracts and the level of pre-existing burdens, the census tracts with burdens at or above the 90th percentile are the same as those either at or above the 80th percentile for one or more pre-existing pollutant burdens or above the 66.66th percentile for one or more pre-existing chronic-disease burden, as shown in **Figure 17D-15**.



**Table 17D-14. Environmental Justice Communities That Could Experience Truck Traffic Proximity Decreases (Tolling Scenario E)**

COUNTY	COMMUNITY	NUMBER OF TRACTS BY NUMBER OF POLLUTANT OR CHRONIC DISEASE BURDENS (90 <sup>TH</sup> PERCENTILE)				HIGHWAY	DAILY TRUCK VOLUME		
		1-2	3-4	5-6	7		NO ACTION (AADT)	CHANGE (AADT)	CHANGE (%)
Bronx, NY	Crotona–Tremont		2	3		Major Deegan Expwy	15,042	-643	-4%
	Fordham–Bronx Park		1			Major Deegan Expwy	15,024	-686	-5%
	High Bridge–Morrisania		1	2		Major Deegan Expwy	11,872	-165	-1%
	Hunts Point–Mott Haven*		1			Bruckner Expwy	5,624	277	5%
	Kingsbridge–Riverdale		6	1		Major Deegan Expwy	14,679	-595	-4%
Kings, NY	Borough Park		1			Ocean Pkwy	5,689	-11	-0.2%
	Park Slope		1			Prospect Expwy	4,509	-12	-0.3%
New York, NY	Chelsea–Clinton		1			Lincoln Tunnel	2,069	-155	-7%
Queens, NY	Flushing–Clearview	2				Long Island Expwy	11,340	-290	-3%
	Fresh Meadows	1	1			Long Island Expwy	11,542	-283	-2%
	Jamaica	2				Van Wyck Expwy	7,487	-104	-1%
	Ridgewood–Forest Hills		5			Long Island Expwy	12,250	-153	-1%
	Southwest Queens	2				Van Wyck Expwy	5,039	-102	-2%
	West Queens		6			Brooklyn Queens Expwy East	2,303	-64	-3%
						Long Island Expwy	12,443	-170	-1%
Essex, NJ	Newark		3	5	1	I-78	13,535	-547	-4%
						I-95	12,573	-124	-1%
						McCarter Hwy	5,154	-23	-0.4%
						US 1-9	7,274	-30	-0.4%
						US 22	5,018	-24	-0.5%
Hudson, NJ	Jersey City	1	1			I-78	1,538	-580	-38%
						Pulaski Skwy	4,622	-142	-3%
	Union City		3			NJ 495	7,813	-703	-9%
Union, NJ	Union	2				I-78	8,569	-310	-4%
						US 22	4,289	-1	-0.03%
Nassau, NY	Hempstead	1				Nassau Expwy	1,708	-2	-0.1%

Source: U.S. Census Bureau, ACS 2015–2019 5-Year Estimates; USEPA NATA 2017 and Agency Air Quality System 2018 via EJScreen 2021 data; CDC PLACES Estimates 2020 via EJ 2022 data; BPM, WSP 2021.

Note: \*Truck traffic proximity decreases in this census tract, even though AADT on this highway shows a net increase.



**Appendix 17D: Technical Memorandum –**

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

**17D-7.1 OVERBURDENED AREAS THAT MAY NEED MITIGATION**

The communities in **Table 17D-15** are those where individuals experience either pre-existing pollutant burdens or chronic-disease burdens at or above the 90th percentile among all communities in the United States, and where the Project could increase exposure to truck traffic due to traffic diversions as well as related pollutants and associated health effects. **Appendix D, Table 1** of this Technical Memorandum provides a detailed list of the census tracts summarized in **Table 17D-15**.

Table 17D-15. Environmental Justice Communities That May Need Mitigation (Tolling Scenario E)

COUNTY	COMMUNITY	NUMBER OF TRACTS BY NUMBER OF PRE-EXISTING POLLUTANT OR CHRONIC DISEASE BURDENS (90TH PERCENTILE)*				HIGHWAY	DAILY TRUCK VOLUME		
		1-2	3-4	5-6	7		No Action (AADT)	Change (AADT)	Change (%)
Bronx, NY	Crotona–Tremont		10	6		Cross Bronx Expwy	21,819	168	1%
	High Bridge–Morrisania		2	2		Cross Bronx Expwy	21,819	168	1%
	Hunts Point–Mott Haven		4	7		Major Deegan & Bruckner Expwys	7,618	874	11%
						Approach to RFK Bridge	9,868	1,339	14%
	Northeast Bronx			1		New England Thruway	13,640	191	1%
	Pelham–Throgs Neck	2	10	5		Cross Bronx Expwy Ext.	9,580	398	4%
						Throgs Neck Expwy	4,194	50	1%
						Bruckner Expwy	5,624	277	5%
Kings, NY	Bensonhurst–Bay Ridge	1	1			Gowanus Expwy	5,614	329	6%
	Downtown Brooklyn–Fort Greene		5	3		Brooklyn Queens Expwy	14,107	891	6%
	South Williamsburg		3	4		Brooklyn Queens Expwy	15,762	878	6%
	Sunset Park		15			Gowanus Expwy	5,031	310	6%
New York, NY	East Harlem			2		Approach to RFK Bridge	1,513	1,556	103%
	Randall's Island				1	RFK Bridge on Randalls Island	12,432	3,170	25%
	Washington Heights–Inwood		3			Trans-Manhattan Expwy	15,217	336	2%
Queens, NY	Bayside–Little Neck	5				Clearview Expwy	12,029	485	4%
	Flushing–Clearview	1	1			Clearview Expwy	14,332	631	4%
						Whitestone Expwy	7,118	378	5%
	Jamaica	4				Van Wyck Expwy	8,876	303	3%
	Long Island City–Astoria		7			Grand Central Pkwy	9,935	2,522	25%
						Brooklyn Queens Expwy	12,572	1,982	16%
						Long Island Expwy	4,446	217	5%
	Ridgewood–Forest Hills*		1			Long Island Expwy	11,851	(116)	-1%
	Southeast Queens**	2				Clearview Expwy	7,649	59	1%
	Southwest Queens	2				Van Wyck Expwy	7,264	12	0.2%
Richmond, NY	West Queens		9			Long Island Expwy	4,446	217	5%
						Brooklyn Queens Expwy	8,657	1,696	20%
						MLK Expwy	3,023	339	11%
	Stapleton–St. George	1				Staten Island Expwy	4,354	403	9%



## Central Business District (CBD) Tolling Program Environmental Assessment

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

COUNTY	COMMUNITY	NUMBER OF TRACTS BY NUMBER OF PRE-EXISTING POLLUTANT OR CHRONIC DISEASE BURDENS (90TH PERCENTILE)*				HIGHWAY	DAILY TRUCK VOLUME		
		1-2	3-4	5-6	7		No Action (AADT)	Change (AADT)	Change (%)
Bergen, NJ	Fort Lee***		2			I-95	21,427	368	2%
						N Bergen Blvd	6,499	312	5%
						NJ Rt 4	12,413	35	0.3%
	Hackensack	1				I-80	15,034	208	1%
	Ridgefield Park Village		1			US-46	3,202	195	6%
	Palisades Park		1			US 1-9-46	2,854	344	12%
	Lodi	1				I-80	9,976	164	2%
						NJ Rt 17	9,387	345	4%
						US-46	4,420	13	0.3%
	Paramus	1				NJ Rt 17	8,858	333	4%
						NJ Rt 4	7,300	3	0.04%
	Ridgefield		1				I-95	10,644	266
US-9							2,905	48	2%
Essex, NJ	East Orange	0	1	0	0	I-280	2,840	59	2%
	Newark	1	3	2	0	McCarter Hwy	6,381	17	0.3%
						I-280	6,425	117	2%
	West Orange	1	0	0	0	I-95	5,618	116	2%
City of Orange	1	0	1	0	I-280	5,722	115	2%	
Hudson, NJ	Bayonne	4				NJ Rt 440	7,432	443	6%
	Harrison		2			I-280	6,951	118	2%
	Jersey City	2	3			Tonnelle Ave	4,461	540	12%
						NJ Rt 139	3,571	207	6%
	Kearny	1				I-280	6,954	107	2%
						NJ Rt 9	11,481	359	3%
Nassau, NY	North Hempstead	1	1			Long Island Expwy	7,744	3	0.04%

Source: U.S. Census Bureau, ACS 2015-2019 5-Year Estimates; USEPA NATA 2017 and Agency Air Quality System 2018 via EJScreen 2021 data; CDC PLACES Estimates 2020 via EJ 2022 data; BPM, WSP 2021.

Notes: \* Truck traffic proximity increases in this census tract, even though AADT shows a decrease.

\*\* Census Tract 1571.02 shows a truck traffic proximity increase due to an increase of less than 1 truck per day on a Cross Island Parkway service road.

\*\*\* Under Tolling Scenario G, Fort Lee would not experience increases.



**Table 17D-15** also includes many of the locations identified in **Table 17D-13** as having potential non-truck traffic effects under Tolling Scenario G, the Tolling Scenario with the greatest non-truck traffic increases. Among the communities listed in **Table 17D-13** and not identified through the highway truck-traffic proximity analysis, potential increases on the FDR Drive in Lower Manhattan and the Lower East Side are the largest in terms both of absolute and percentage increases in AADT. In Lower Manhattan, daily volumes could increase under Tolling Scenario G by 3,137 non-truck vehicles, or 7.1 percent, per day on the FDR Drive, while to the north, the Lower East Side neighborhood could see increases of 8,150 vehicles per day, or 7.6 percent, on the same highway. All other communities would see much lower increases or decreases;<sup>108</sup> the next-highest increases on Tolling Scenario G would be on the Garden State Parkway in Irvington, at 1,128 non-truck vehicles per day, which would be a 0.9 percent increase.

## 17D-7.2 MITIGATION MEASURES

In the EA, the Project Sponsors commit to a number of mitigation and enhancement measures to address potential Project effects. Based on public comment, the Project Sponsors have clarified and/or modified some of these measures and commit to additional mitigation measures in this Technical Memorandum.<sup>109</sup> The following discussion focuses specifically on new mitigation measures that will address the potential adverse effects from Project-related traffic diversions in environmental justice communities described in this Technical Memorandum. For information on other new measures, see the response to **Comment 39** in **Appendix 18A, “Responses to Frequently Received Comments.”**

As described in this Technical Memorandum, certain environmental justice communities, including some that are overburdened, relative to national percentiles, due to pre-existing air pollution and chronic diseases, would benefit from decreased truck traffic as a result of the Project. However, some communities that are already overburdened due to pre-existing air pollution and chronic diseases, relative to national percentiles, could see an adverse effect as a result of some trucks diverting around the Manhattan CBD. If the Project receives Federal approval, the Project Sponsors will implement mitigation measures to address

<sup>108</sup> As noted in **Section 17D-6.1.3**, in some cases, nearby roadways are predicted to have decreases in AADT when traffic proximity increases. This occurs because of the distance weighting that is part of calculating changes in traffic proximity. A nearby roadway may show a net decrease in traffic AADT, but the center of a census tract’s population may be closer to a portion of the roadway with estimated increases in truck volumes, meaning that the area’s traffic proximity measurement increases.

<sup>109</sup> The Project Sponsors have also committed to air quality monitoring, prioritizing transition to zero-emissions bus fleet, and establishing an Environmental Justice Community Group. See response to Frequently Received Comment 39 in EA **Appendix 18A, “Responses to Frequently Received Comments,”** for more information. With respect to air quality monitoring, TBTA will coordinate with NYC DOHMH to expand NYC’s existing network of sensors to monitor priority locations, and supplement a smaller number of real-time PM<sub>2.5</sub> monitors to provide insight into time-of-day patterns to determine whether the changes in air pollution can be attributed to changes in traffic occurring after implementation of the Project. The Project Sponsors will select the additional monitoring locations in consideration of air quality analysis in the EA and input from environmental justice stakeholders. NYSDEC and other agencies conducting monitoring will also be consulted prior to finalizing the monitoring approach. The Project Sponsors will monitor air quality prior to implementation (setting a baseline), and two years following implementation. Following the initial two-year post-implementation analysis period, and separate from ongoing air quality monitoring and reporting, the Project Sponsors will assess the magnitude and variability of changes in air quality to determine whether more monitoring sites are necessary. Data collected throughout the monitoring program will be made available publicly as data becomes available and analysis is completed. Data from the real-time monitors will be available online continuously from the start of pre-implementation monitoring.

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

the potential adverse effects to communities that are already overburdened by pre-existing air pollution and chronic diseases, as identified in **Section 17D-7.1**. To fund these mitigation measures the Project Sponsors have committed \$155 million over five years.<sup>110</sup> An adaptive management approach will be used which will include monitoring the efficacy of mitigation, stakeholder consultation, and adjustments as warranted.

### 17D-7.2.1 Regional Mitigation Measures

The Project Sponsors are committing \$55 million in regional mitigation measures that would reduce truck diversions, decrease emissions resulting from trucks, and reduce truck traffic during the day (**Table 17D-16**). The Project Sponsors commit to these measures, regardless of the tolling structure eventually adopted. These measures would benefit all the communities identified in **Table 17D-15** as follows:

- With respect to reducing truck diversions, modeling for the EA indicated that many of the diversions occur in the overnight hours, in part because of the toll rate (in the seven tolling scenarios analyzed in the EA, a large truck would pay a CBD toll of between \$7 and \$41 in the overnight period). Though overnight tolls modeled are already lower than the peak period toll, reducing the overnight toll further for trucks would reduce these diversions. Thus, the Project Sponsors commit to ensuring that the overnight toll for trucks and other vehicles is reduced to at or below 50 percent of the peak toll from at least 12:00 a.m. to 4:00 a.m., to decrease the incentivize for trucks to bypass the Manhattan CBD by diverting elsewhere across the 10-county environmental justice study area.
- For trucks that still divert to avoid this lower toll, the Project Sponsors will commit Project gross revenue to expand the NYC Clean Trucks Program and help lower truck emissions. The program funds the conversion of old, more polluting, trucks to newer electric, hybrid, or clean diesel vehicles. In addition to mitigating effects where truck diversions would occur, expanding the program will also mitigate effects where non-truck traffic diversions could occur but where truck traffic would decrease; in these locations, the program will reduce emissions from the vehicles still traveling on those roadways. The NYC Clean Trucks Program has previously funded the conversion of over 600 trucks, and the funding commitment of \$20 million would allow for the conversion of approximately 500 more trucks that could yield reductions of roughly one ton of PM<sub>2.5</sub> and 30 tons of NOx per year.<sup>111</sup> Participating trucks currently must be associated with a NYC Industrial Business Zone and 70 percent of the vehicle's mileage must occur within the New York–New Jersey–Connecticut tri-state area. NYCDOT monitors compliance with program requirements on an ongoing basis.
- Further, the Project Sponsors are committing to expanding the NYCDOT Off-Hours Delivery Program. This would result in air quality benefits by reducing truck travel times and truck traffic during peak periods (a 2009 study found that the median off-hours delivery time in Manhattan was 25 minutes compared to over one hour for deliveries between 7:00 a.m. and 4:00 p.m.). It would also result in

<sup>110</sup> An additional \$5 million has been allocated for mitigation and enhancement measures related to monitoring across other topics, along with \$47.5 million for a low-income toll discount. See **Chapter 16, "Summary of Effects,"** for information on all of the mitigation and enhancement measures for the Project.

<sup>111</sup> NYCDOT analysis of NYC Clean Trucks Program participant data, 2022.

safety benefits by reducing potential conflicts with other vehicles and pedestrians during daytime hours.<sup>112</sup> The further reduced overnight tolls will also incentivize participation in this program.

**Table 17D-16. Regional Mitigation Commitments**

MITIGATION MEASURES	BENEFIT AND RESULT OF MITIGATION	5-YEAR FUNDING <sup>1</sup>	FUNDING SOURCE	IMPLEMENTATION LEAD
Further reduce the overnight toll	Minimize/avoid truck diversions	\$30 million	CBD Tolling Program	TBTA
Expand NYC Clean Trucks Program	NOx and PM <sub>2.5</sub> reductions from ~500 new clean trucks	\$20 million	CBD Tolling Program	NYCDOT
Expand NYCDOT Off-Hours Delivery Program	Safety and emissions reduction benefits resulting from reduced truck traffic during the day	\$5 million	CBD Tolling Program	NYCDOT

<sup>1</sup> An additional \$5 million has been allocated for mitigation and enhancement measures related to monitoring across other topics, along with \$47.5 million for the low-income toll discount discussed above. Enhancement measures include air quality monitoring that will expand NYC's existing monitoring network. Locations will be selected in consideration of the traffic and air quality analyses in the EA and in coordination with environmental justice stakeholders and relevant state and local agencies. This will complement the regional and place-based mitigation measures related to traffic diversions outlined in Tables 17D-16 and 17D-18 (see **Chapter 10, "Air Quality,"** for details).

### 17D-7.2.2 Place-Based Mitigation Measures

Results from analysis of non-truck traffic effects draw attention to traffic increases on the FDR Drive adjacent to the Lower Manhattan and Lower East Side communities. Additional modeling indicated that some of these increases could be mitigated by ensuring that vehicles traveling to Manhattan on the Brooklyn Bridge and then southbound on the FDR Drive by first going north, then exiting from the FDR Drive to East Houston Street, and then immediately turn left to head back south on the FDR Drive, would be tolled.

Modeling indicates that 25 to 35 percent of the traffic increases on the FDR Drive could be avoided by ensuring that any vehicle making this move is tolled, thereby disincentivizing the movement. Therefore, in addition to the traffic monitoring plan for this area related to potential adverse effects on traffic, the Project Sponsors affirmatively commit to implementing a tolling system design that will make this a tolled movement and will preclude the TBTA Board from adopting a toll structure that makes this a free movement.

Given that other communities with potential increases in non-truck traffic proximity would see much lower increases or decreases than the communities adjacent to Lower Manhattan and the Lower East Side, the concerns about Project-generated increases in truck traffic in environmental justice communities that were specifically raised during early outreach efforts and by commenters on the EA, and the fact that mitigation focused on truck emissions will benefit many of the same locations that could experience non-truck traffic, the Project Sponsors focus the remaining discussion on mitigation in locations predicted to experience increases in truck traffic (some of which could also experience increases in non-truck traffic).

<sup>112</sup> NYCDOT, Sustainable Streets Index, 2010. <https://www.nyc.gov/html/dot/downloads/pdf/ssi10-offhour.pdf>

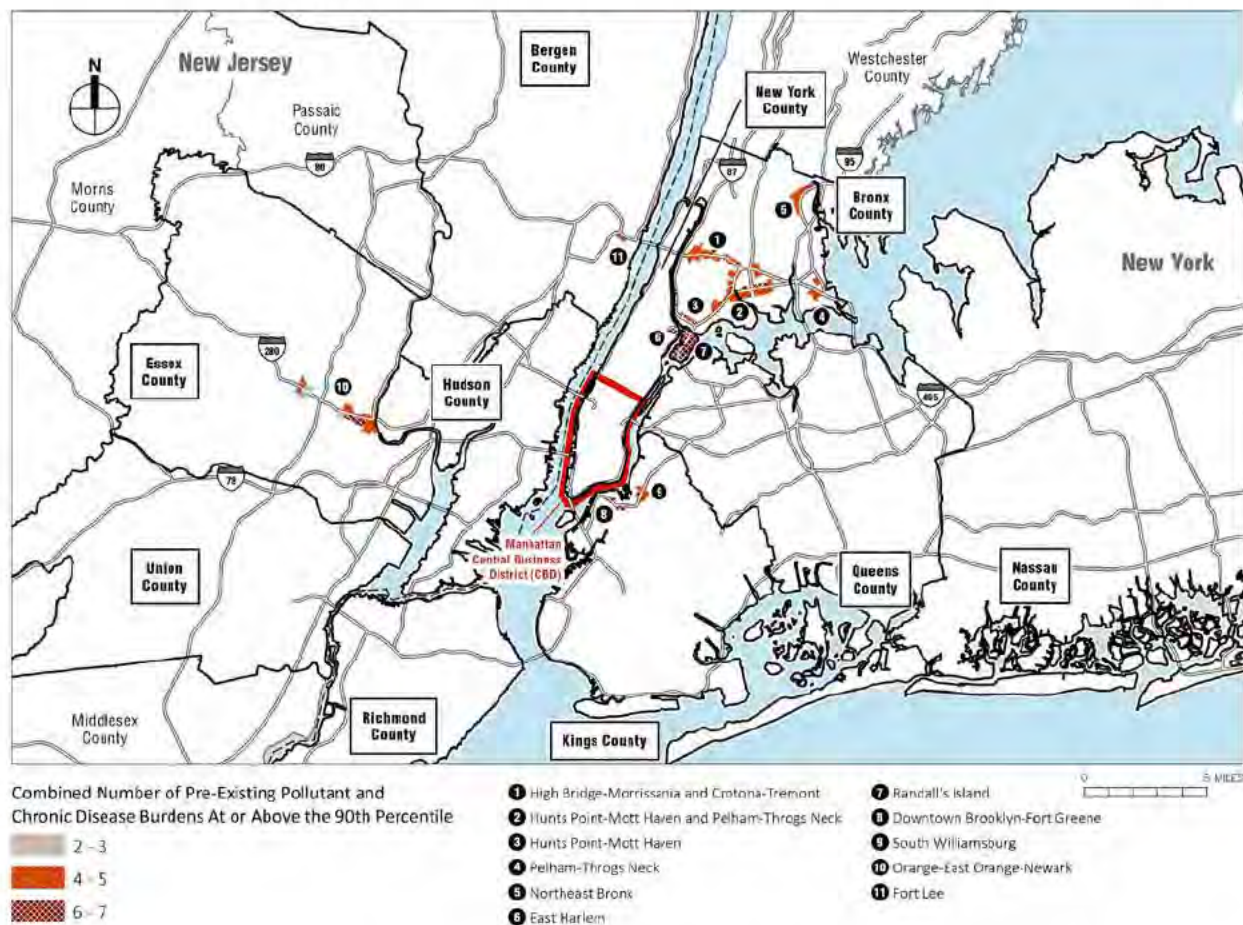


## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

In addition to the regional mitigation commitments, the Project Sponsors are committing to \$100 million in place-based mitigation measures, regardless of the final toll adopted by the TBTA Board. **Figure 17D-18** depicts the environmental justice census tracts where individuals experience at least one pre-existing pollutant burden and at least one pre-existing chronic disease burden at or above the 90th percentile, nationally, and where truck proximity could increase as a result of the Project. The map further categorizes each tract by the number of indicators for which the tract is in the 90th national percentile or higher. The tracts shown here have a combined number of indicators at or above the 90th percentile between two and seven; none are at or above the 90th percentile for eight or all nine indicators.

**Figure 17D-18. Environmental Justice Census Tracts with High Pre-Existing Pollutant and Chronic Disease Burdens Where Truck Traffic Proximity Could Potentially Increase (Tolling Scenario E)**



Source: USEPA NATA and Agency Air Quality System via EJScreen 2021 data; CDC PLACES Estimates 2020 via EJI 2022 data; BPM, WSP 2021.

Note: Percentiles are national. Census Tract 3009, Nassau County not shown. Potential truck volume increases and decreases on roadways within the tract would ultimately cancel each other out and result in no change of truck traffic proximity for the residential populations within the tract.

The census tracts where increases or decreases would occur are often in the same neighborhoods and towns. In 63 census tracts with high pre-existing pollutants and health burdens, truck traffic proximity would remain the same (47) or decrease (16) in Tolling Scenario E. Under the same tolling scenario, truck traffic proximity could increase in 56 environmental justice census tracts where at least one pre-existing pollutant burden and at least one pre-existing chronic disease are at or above the 90th percentiles (the locations of increases are listed in **Table 17D-17**, and the 56 census tracts are listed individually in **Appendix D, Table 2** of this Technical Memorandum).

The specific census tracts that would experience increased or decreased truck traffic change slightly depending on the tolling scenario. The following communities (as illustrated in **Figure 17D-18** and listed in **Table 17D-17**) could have census tracts that would merit place-based mitigation: High Bridge, Morrisania and Crotona, Tremont, Hunts Point, Mott Haven, Pelham, Throgs Neck, Northeast Bronx, East Harlem, Randall's Island, Downtown Brooklyn, Fort Greene, South Williamsburg, Orange, East Orange, Newark, and Fort Lee.

As seen in **Table 17D-17**, certain areas in the Bronx, notably Hunts Point and High Bridge, have many census tracts with high pre-existing burdens. Though the increase in traffic at some of these locations is more modest (e.g., along the Cross Bronx Expressway), when combined with the pre-existing burdens, it suggests a high priority for place-based mitigation measures. Other locations, particularly East Harlem, do not have a large number of tracts with pre-existing pollutant or chronic disease burdens, but do have a larger increase in truck traffic and therefore also merit place-based mitigation measures. Locations with neither high pre-existing burdens, nor large increases in truck traffic, that may experience adverse effects from Project-related diversions will be addressed more broadly through regional mitigation described earlier.

Place-based mitigation measures that will provide direct emissions reductions and air quality improvements, and will address some of the pre-existing health burdens that are identified in **Table 17D-18**.

Replacement of polluting transport refrigeration units (TRUs) at the Hunts Point Produce Market could lead to as much as 21 tons of NO<sub>x</sub> and 2.5 tons of PM<sub>2.5</sub> reduction per year for every 100 TRUs. These benefits are greater in magnitude than the potential air quality impacts of the Project in the Bronx but would be geographically limited to the Hunts Point area.

Electric truck charging infrastructure is key to enabling the environment for zero-emissions vehicles to operate in communities already overburdened by pre-existing air pollution and chronic diseases, relative to national percentiles. Through the installation of 35 new chargers for medium- and heavy-duty vehicles at three stations, the conversion to zero-emissions vehicles can be accelerated, leading to reductions in NO<sub>x</sub> and PM<sub>2.5</sub>. For this particular mitigation, Federal Carbon Reduction Program funds and CBD Tolling Program revenues would be used.

Two greening mitigation measures—the installation of roadside vegetation to improve near-road air quality and the renovation of parks and greenspaces—would help to improve community well-being and can have multiple other benefits such reducing air temperatures, preventing stormwater runoff, and increasing social interaction. If properly designed, roadside vegetation can also improve near-road air quality.



## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

**Table 17D-17. Daily Truck Volume in Tolling Scenario E Compared to No Action in Overburdened Communities**

COUNTY	MAP MARKER	COMMUNITY	NO. OF TRACTS BY NO. PRE-EXISTING POLLUTANT, CHRONIC DISEASE BURDENS			HIGHWAYS	DAILY TRUCK VOLUME		
			2-3	4-5	6-7		NO ACTION (AADT)	CHANGE E (AADT)	CHANGE (%)
Bronx, NY	1	High Bridge–Morrisania and Crotona–Tremont	0	16	2	Cross Bronx Expwy	21,819	168	0.8%
	2	Hunts Point–Mott Haven/Pelham–Throgs Neck	0	11	3	Bruckner Expwy	5,624	277	4.9%
	3	Hunts Point–Mott Haven	0	1	2	Major Deegan & Bruckner Expwys	7,618	874	11.5%
			0	0	1*	Approach to RFK Bridge	9,868	1,339	13.6%
	4	Pelham–Throgs Neck	0	1	0	Throgs Neck Expwy	4,194	50	1.2%
			0	1	0	Cross Bronx Expwy Ext.	9,580	398	4.2%
	5	Northeast Bronx	0	1	0	New England Thruway	13,640	191	1.4%
New York, NY	6	East Harlem	0	0	2	RFK Bridge Approach at E 125th St	1,513	1,556	102.8%
	7	Randall's Island	0	0	1	RFK Bridge on Randall's Island	12,432	3,170	25.5%
Kings, NY	8	Downtown Brooklyn–Fort Greene	0	0	3	Brooklyn Queens Expwy	14,107	891	6.3%
	9	South Williamsburg	0	3	1	Brooklyn Queens Expwy	15,870	853	5.4%
Essex, NJ	10	Orange–East Orange–Newark	2	3	1	I-280	6,106	116	1.9%
Bergen, NJ	11	Fort Lee	0	1	0	I-95/George Washington Bridge	14,768	195	1.3%

## Notes:

\* Census Tract 27.01, Bronx County, immediately north of junction between bridge approach and Bruckner Expwy; tract also included in row for Major Deegan & Bruckner Expwys above.

\*\* Tracts with pre-existing air pollutant and chronic disease burdens that would benefit from reduced traffic, and those affected by increased traffic would vary somewhat, but the identified communities remain largely the same across tolling scenarios. Under Tolling Scenario G, Fort Lee would not experience increases.

\*\* Census Tract 3009, Nassau County, Closer examination indicates that this tract is shown with a potential increase in truck traffic proximity under Tolling Scenario E; though roadways passing through the tract have the potential to see decreases in truck traffic, the center of its population is near a roadway where modeling indicates that truck traffic could increase.



Table 17D-18. Place-Based Mitigation Commitments

MITIGATION MEASURES	BENEFIT AND RESULT OF MITIGATION	5-YEAR FUNDING <sup>1</sup>	RELEVANT LOCATION(S)	FUNDING SOURCE	IMPLEMENTATION LEAD
Traffic-Related Air Emissions					
Replacement of Transport Refrigeration Units (TRUs) at Hunts Point Produce Market	Major NOx and PM2.5 reductions from the replacement of up to 1,000 TRUs	\$15 million <sup>2</sup>	Hunts Point	MTA CMAQ Program	NYCDOT
Implement Electric Truck Charging Infrastructure	NOx and PM2.5 reductions from electric vehicles using 35 new chargers (at seven stations)	\$20 million	After toll rates are set, a process that includes both additional analyses and community input will take place to determine specific locations	\$10 million Federal CRP* + \$10 million CBD Tolling Program	NYSDOT
Install Roadside Vegetation to Improve Near-Road Air Quality	Improves near-road air quality by pollutant capture from ~4,000 trees and ~40,000 shrubs	\$10 million		CBD Tolling Program	TBTA with Relevant State and Local Agencies
Renovate Parks and Greenspace in Environmental Justice Communities	Increases overall community well-being. 2-5 park/greenspace renovations depending on size and complexity.	\$25 million		CBD Tolling Program	TBTA with Relevant State and Local Agencies
Associated Health Burdens					
Install Air Filtration Units in Schools Near Highways	Removes air pollutants from classrooms. 25-40 schools depending on school size and complexity of existing HVAC system.	\$10 million	After toll rates are set, a process that includes both additional analyses and community input will take place to determine specific locations	CBD Tolling Program	TBTA with Relevant State and Local Agencies
Establish Asthma Case Management Program and Bronx Center	Reduces hospitalizations and doctor visits, decreases days and nights with symptoms and missed school days – program expansion up to 25 schools	\$20 million		CBD Tolling Program	NYC DOHMH

## Notes:

\* CRP – Carbon Reduction Program

<sup>1</sup> An additional \$5 million has been allocated for mitigation and enhancement measures related to monitoring across other topics, along with \$47.5 million for the low-income toll discount discussed above. Enhancement measures include air quality monitoring that will expand NYC's existing monitoring network. Locations will be selected in consideration of the traffic and air quality analyses in the EA and in coordination with environmental justice stakeholders and relevant state and local agencies. This will complement the regional and place-based mitigation measures related to traffic diversions outlined in **Tables 17D-16 and 17D-18** (see **Chapter 10, "Air Quality,"** for details).

<sup>2</sup> After three years, any remaining funds designated for TRU replacements may also be used for clean truck replacement vouchers through the NYC Clean Trucks Program.

**Appendix 17D: Technical Memorandum –**

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens

The installation of air filtration units in schools near highways with truck traffic increases would help to mitigate effects at schools, which are sensitive receptor sites. Deployment would be modeled after NYC DOE's upgrades at Lehman High School in the Bronx to reduce air quality impacts from proximity to the Hutchinson River Parkway. This is one of the most flexible place-based mitigation measures and could be deployed in New Jersey. Costs vary by the type of school, but approximately 40 schools could benefit from this mitigation at this funding amount.

Lastly, funding for an Asthma Case Management Program and a new Bronx neighborhood asthma center modeled after NYC DOHMH's East Harlem Asthma Center of Excellence (EHACE) could bring in-school case management at K-8 schools and neighborhood asthma care capacity to new locations. EHACE's counselor program reported outcomes of 50 percent reduction in hospitalizations, a 56 percent decrease in emergency department visits, significant decreases in the number of days and nights with asthma symptoms, along with reductions in missed school days related to asthma, for program participants.

**17D-7.2.3 Determination of Specific Locations for Place-Based Mitigation**

As noted in **Table 17D-14**, the Project Sponsors have committed to a toll policy that would further reduce tolls in the overnight period. Based on preliminary analysis, it is expected that this policy will avoid a significant portion of projected truck diversions, as many of these diverted trucks are projected to occur during the overnight hours. Following the adoption of a final toll structure by TBTA, which will include this reduced overnight toll rate along with the toll rates and any other potential discounts, crossing credits and/or exemptions, modeling of the adopted tolling structure will be undertaken to compare potential effects to the EA analyses.<sup>113</sup>

After toll rates are set, a process that includes both additional analyses and community input will take place to determine the sites of the place-based mitigation (e.g., in which schools to install air filtration units, or on what roadway to plant vegetation). This will require coordination between the Project Sponsors, the Environmental Justice Community Group (representing the 10-county environmental justice study area), the relevant communities receiving the place-based mitigation, and local implementing agencies and will include needs assessment and feasibility screening to determine the range of possibilities as described further in **Chapter 17, "Environmental Justice."** The Project Sponsors will work with the implementing agencies through existing public engagement and participation processes to then prioritize and select the specific locations. The specific place-based mitigation sites will be made available to the public by a posting on the Project website, as well as direct emails to members of the public who have signed up to receive information about the Project.

<sup>113</sup> As described in the EA, the adopted tolling scenario will be evaluated to determine if it could have effects that are materially different from those identified in the EA; and if so, further analysis may be required before Project implementation.

## 17D-8. Conclusions

As discussed in the EA, all tolling scenarios in the CBD Tolling Alternative would provide benefit by reducing automobile and truck trips to the Manhattan CBD, reducing VMT to and within the Manhattan CBD and regionally, and shifting auto trips to transit. The Project would also bring broad benefits by generating revenue for investment in transit, which is particularly beneficial to environmental justice populations who rely on public transit for commuting and other trips.

Traffic modeling for the Project indicates that the CBD Tolling Alternative would result in some traffic diversions around Manhattan, into the Bronx and northern New Jersey and Staten Island in all tolling scenarios, as some people who would otherwise travel through the Manhattan CBD would choose a different path to avoid the new toll. These diversions from the Project could potentially cause adverse effects in the form of added traffic within some communities that already have pre-existing pollution and chronic disease burdens. These effects would vary in magnitude depending on the volume of increased truck traffic and the extent of pre-existing burdens. A majority of adversely affected census tracts would be environmental justice communities, in part because in the 10-county environmental justice study area, a majority of communities are identified as environmental justice communities.

To address these potential adverse effects, the Project Sponsors have committed to a large investment in mitigation, including regional measures to reduce diversions and emissions from trucks throughout the 10-county environmental justice study area, as well as place-based measures that would be implemented in specific areas that have the highest pre-existing burdens or could experience the largest magnitude of diversions as the result of the Project. The Project Sponsors commit to these measures, regardless of the tolling structure eventually adopted.

With these mitigation commitments incorporated, the Project would not result in a disproportionately high and adverse effect on environmental justice populations.

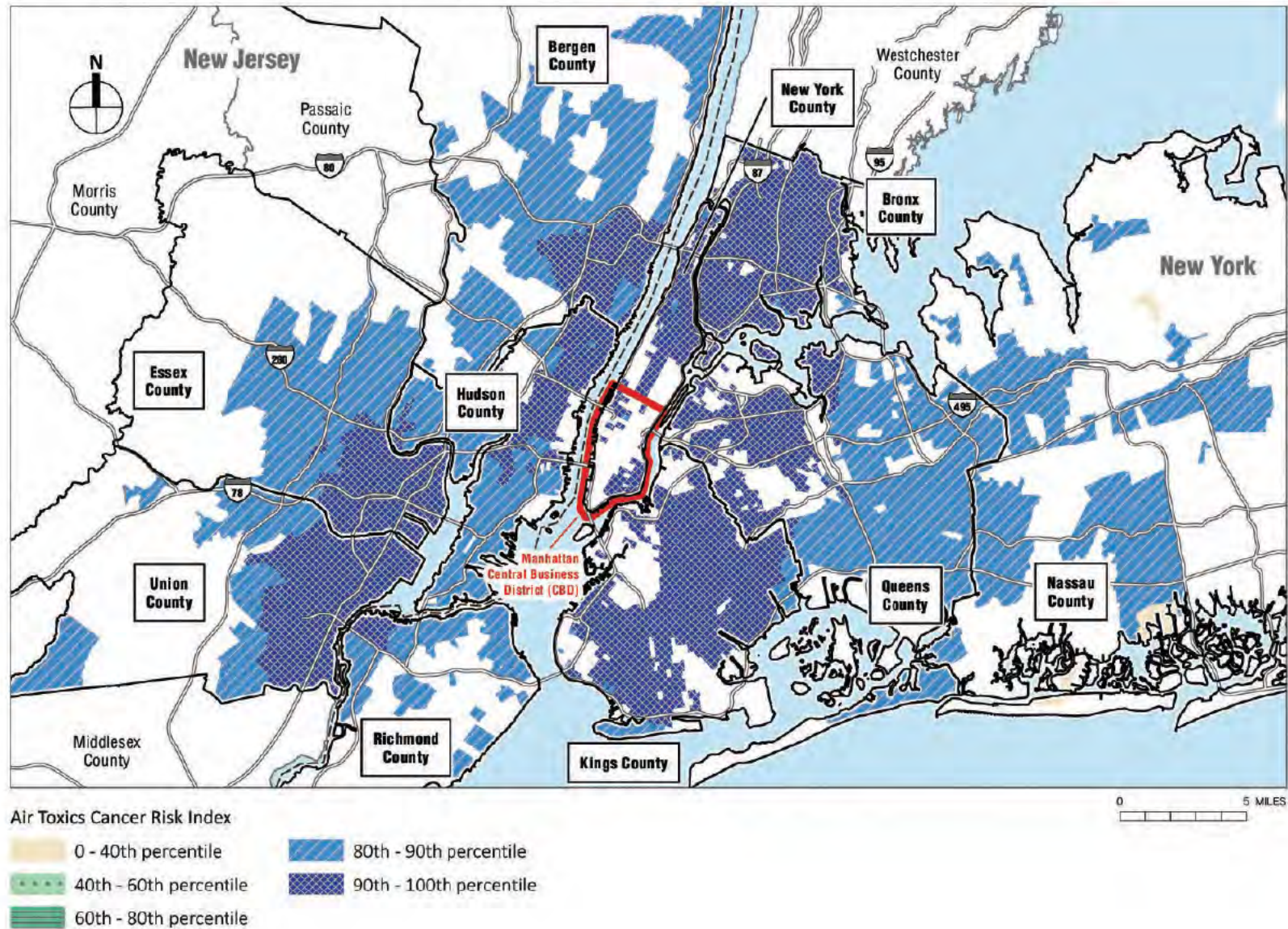




## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix B)

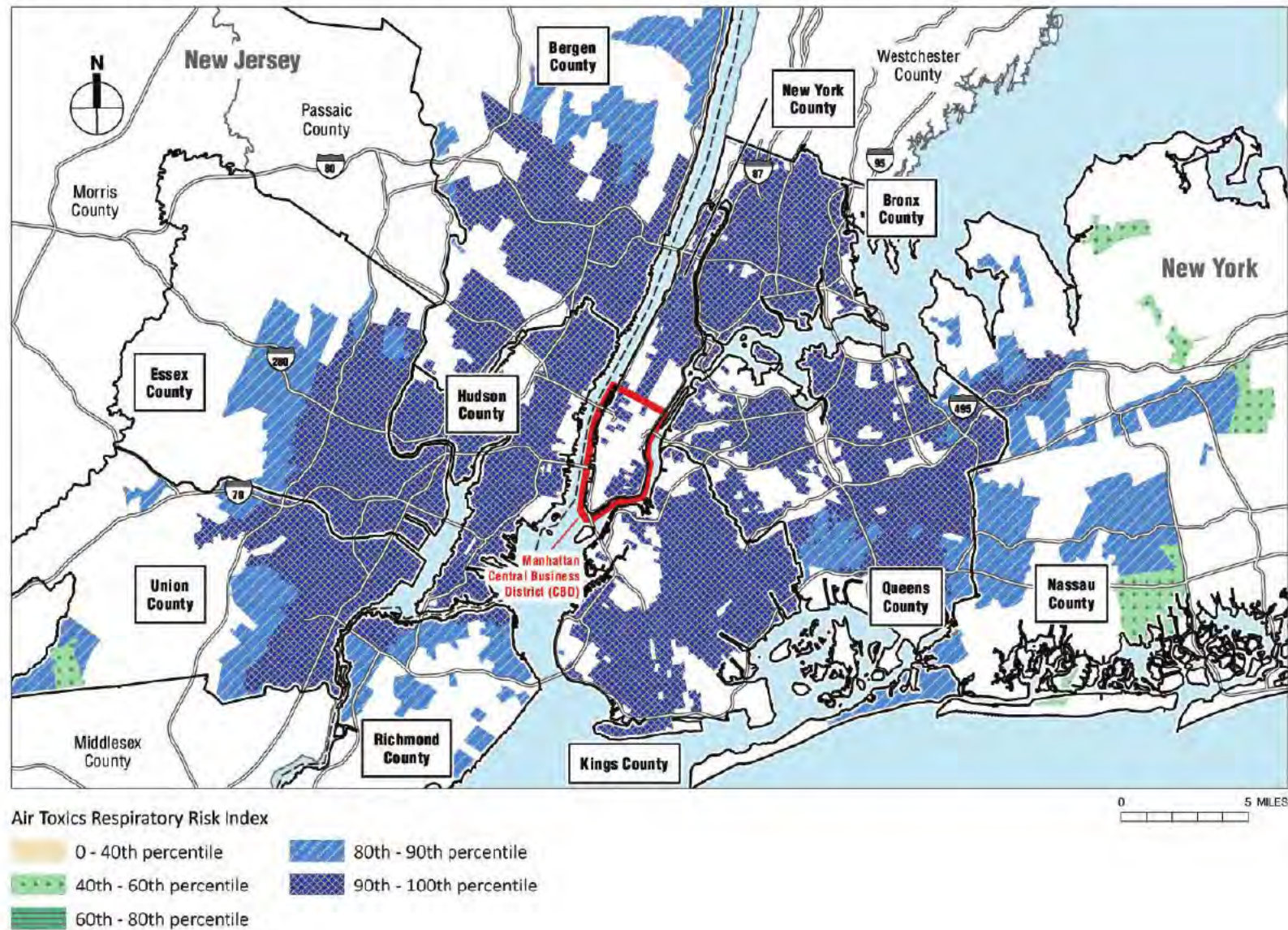
Figure B-1: Air Toxics Cancer Risk Index in Environmental Justice Designated Census Tracts, National Percentiles



Source: USEPA EJScreen 2021 data.



Figure B-2. Air Toxics Respiratory Hazard Index in Environmental Justice Designated Census Tracts, National Percentiles



Source: USEPA EJScreen 2021 data.



## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix B)

Figure B-3. Diesel Particulate Matter Burdens in Environmental Justice Designated Census Tracts, National Percentiles

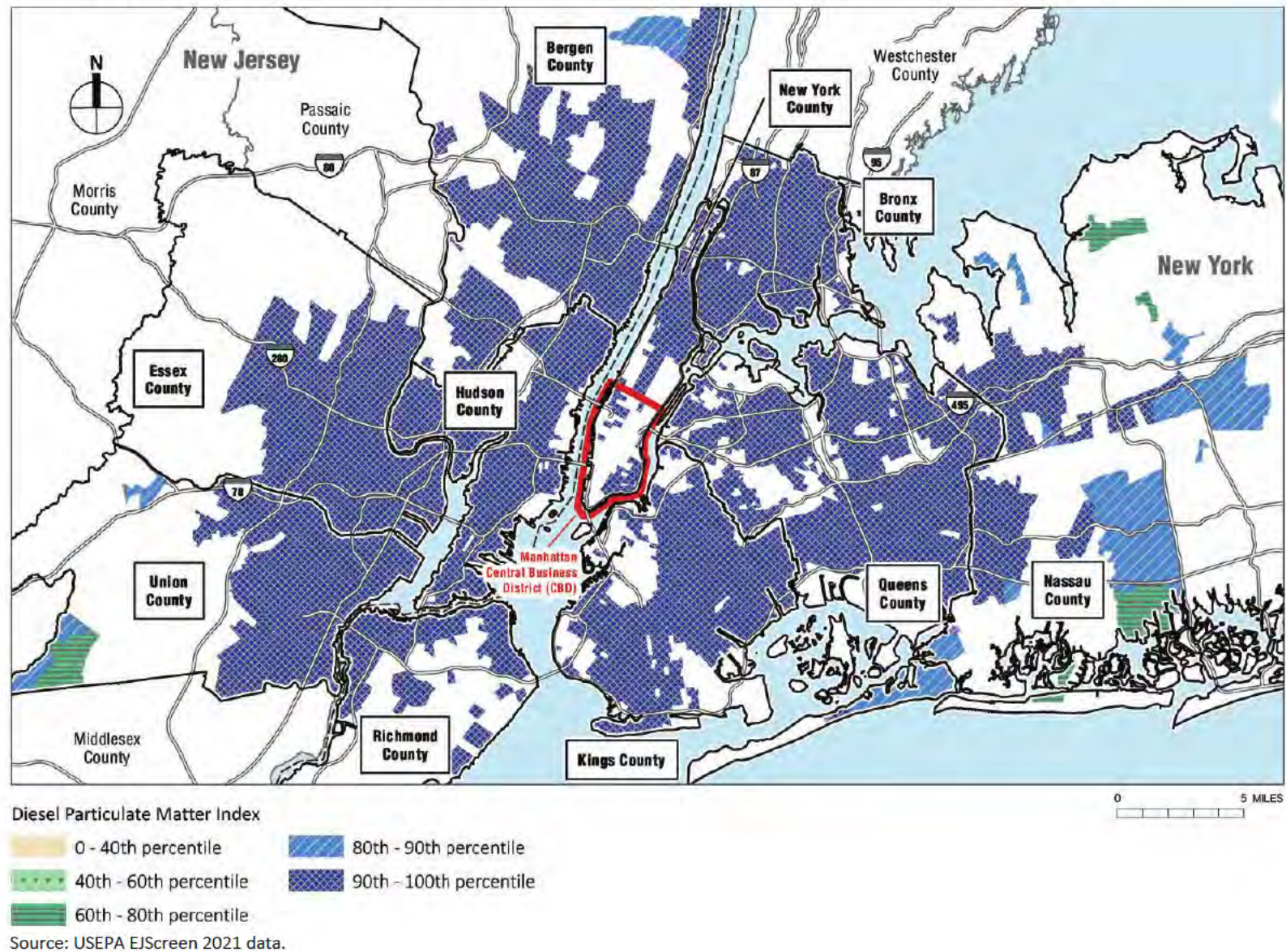
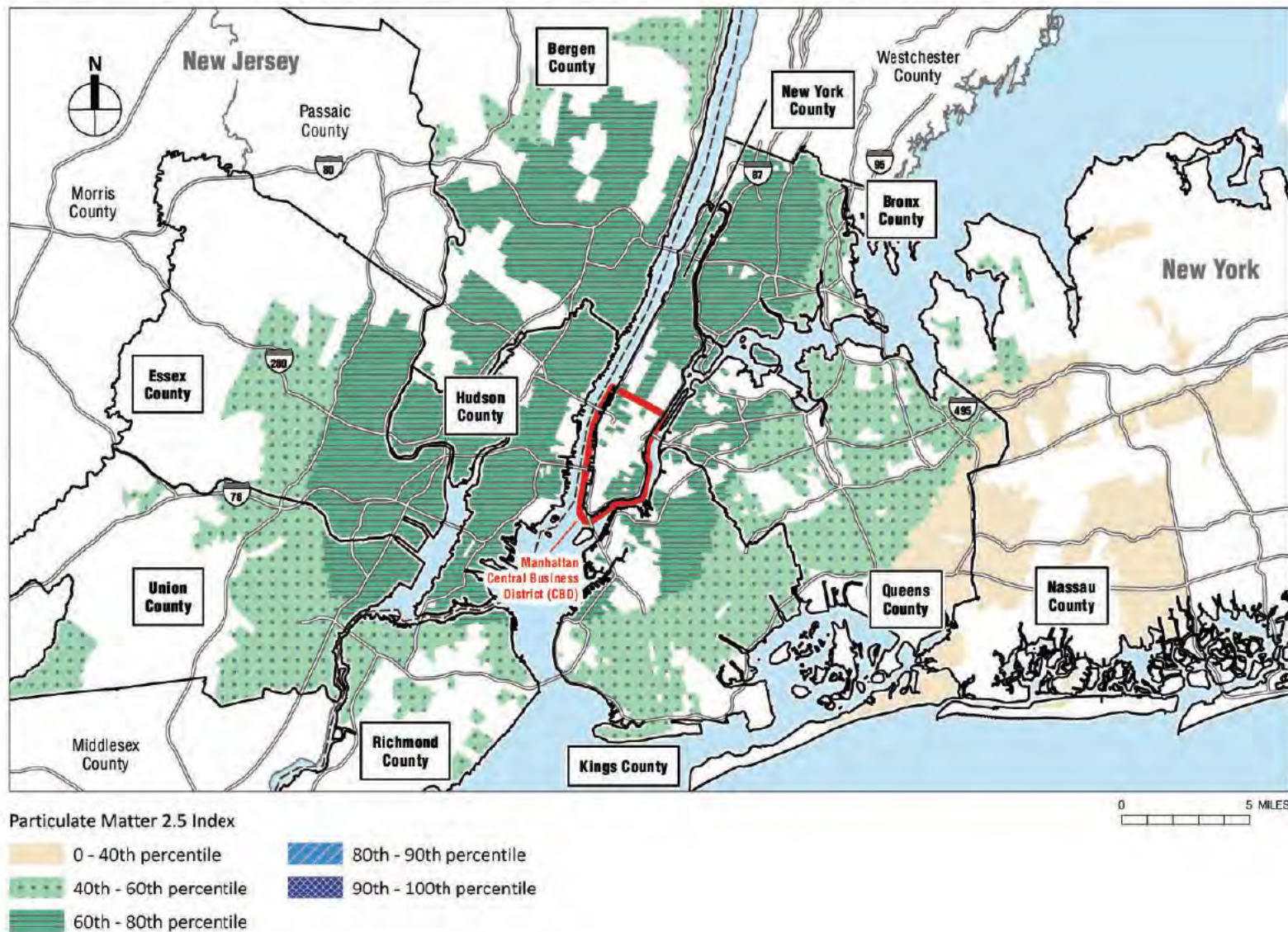




Figure B-4. PM<sub>2.5</sub> Burdens in Environmental Justice Designated Census Tracts, National Percentiles

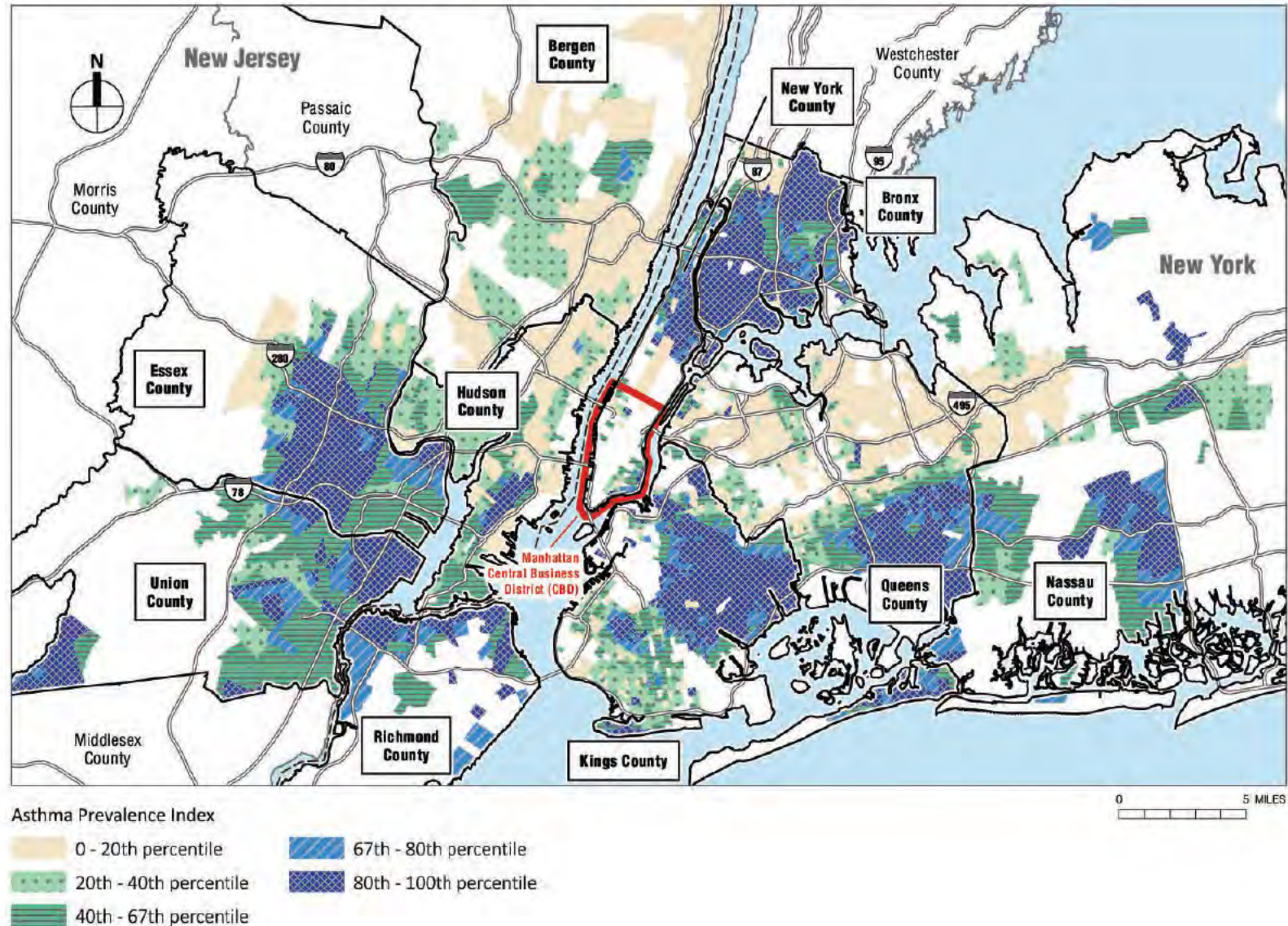
Source: USEPA EJScreen 2021 data.



## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix B)

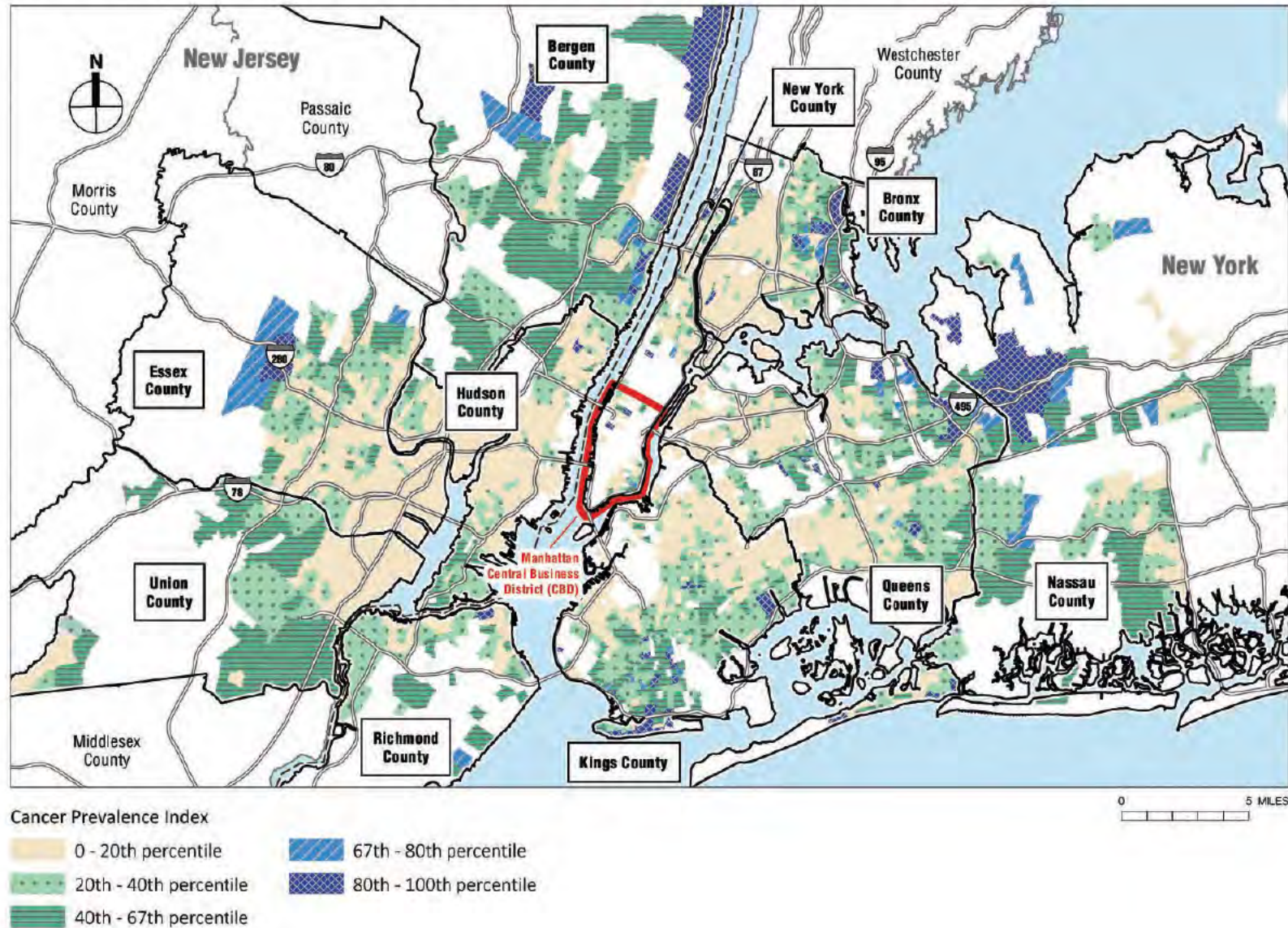
Figure B-5. Asthma Prevalence Among Adults in Environmental Justice Designated Census Tracts, National Percentiles



Source: CDC EJI 2022 data.



Figure B-6. Cancer Prevalence Among Adults in Environmental Justice Designated Census Tracts, National Percentiles



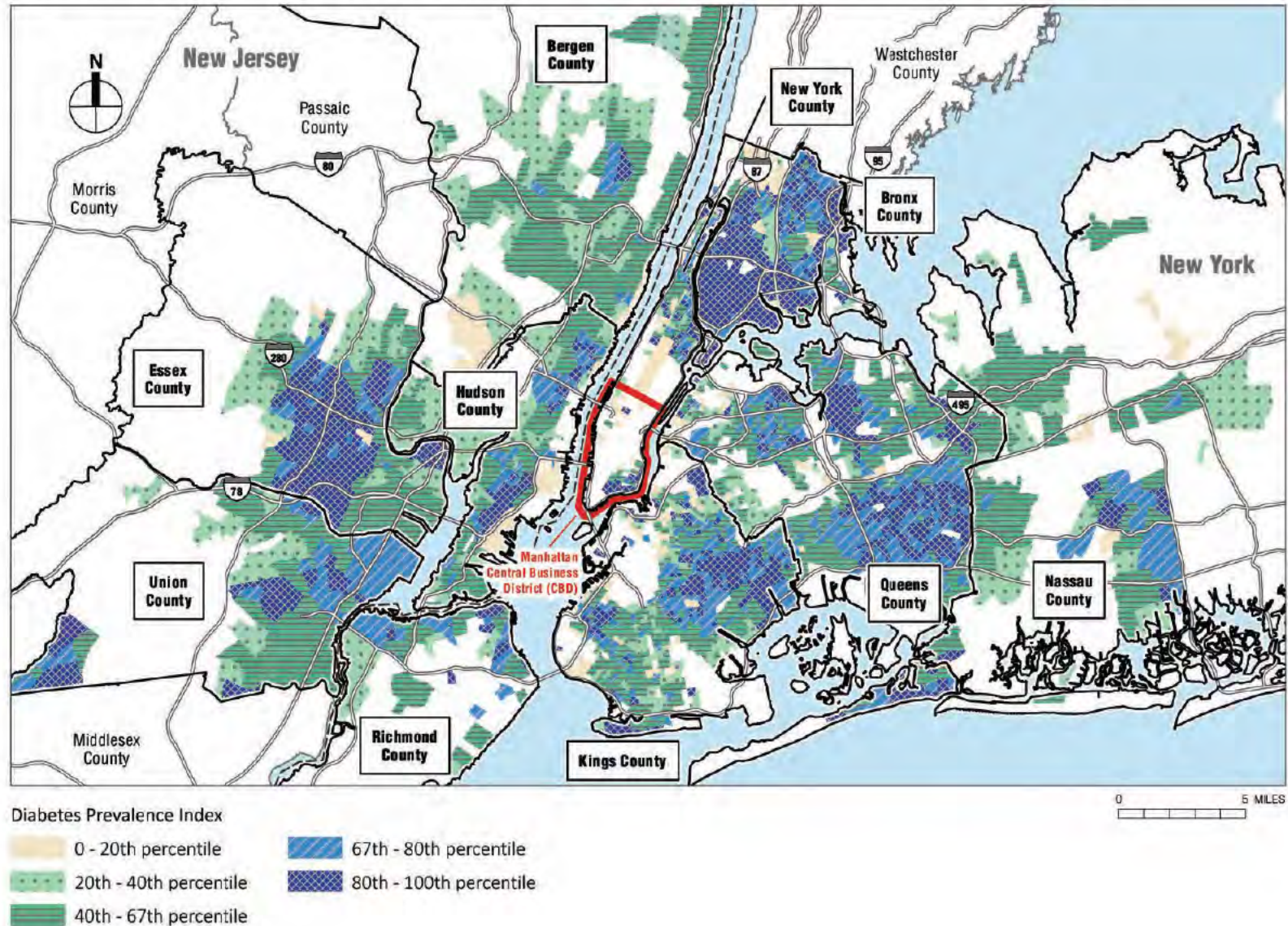
Source: CDC EJI 2022 data.



## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix B)

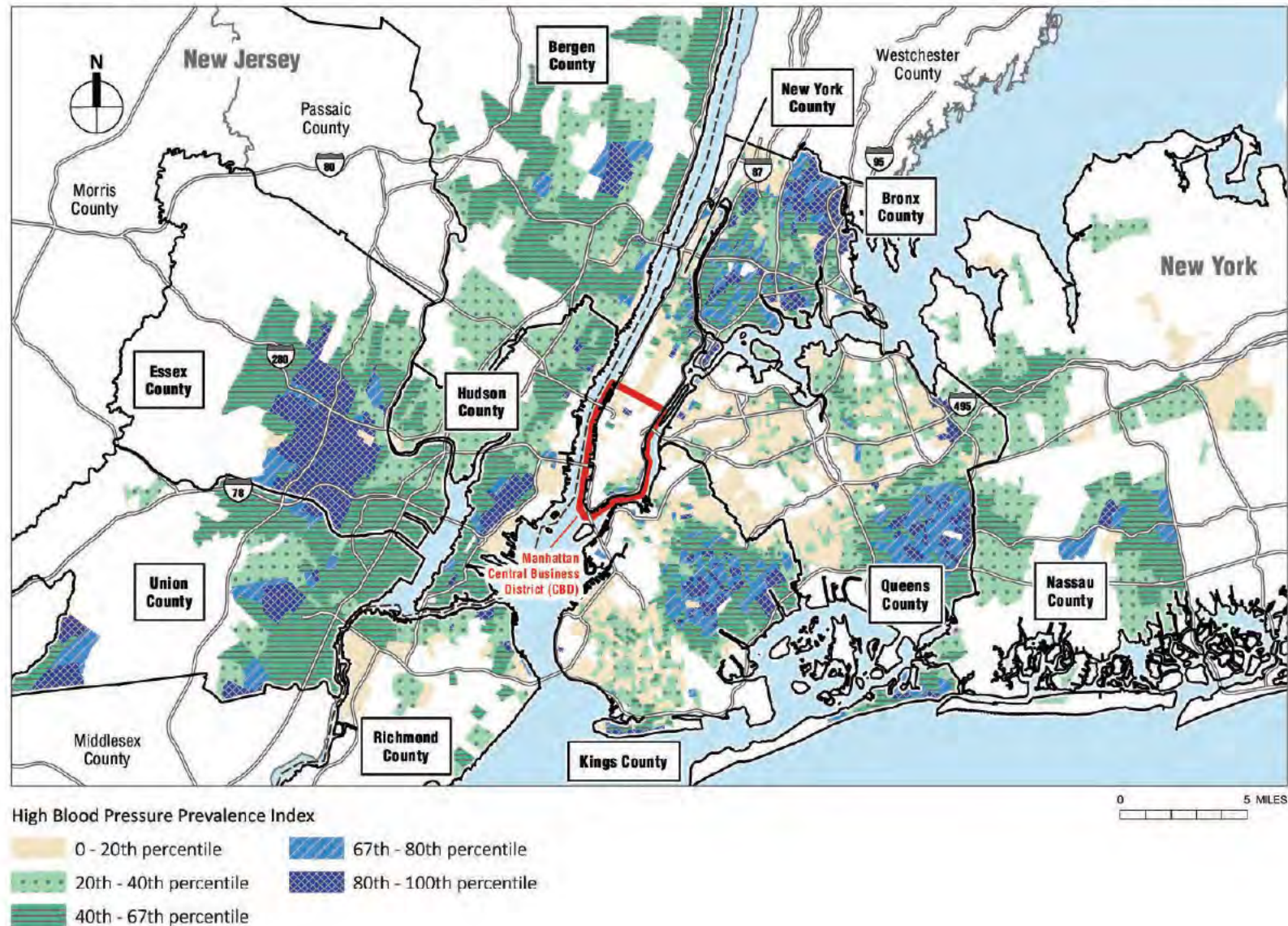
Figure B-7. Diabetes Prevalence Among Adults in Environmental Justice Designated Census Tracts, National Percentiles



Source: CDC EJI 2022 data.



Figure B-8. High Blood Pressure Prevalence among Adults in Environmental Justice Designated Census Tracts, National Percentiles



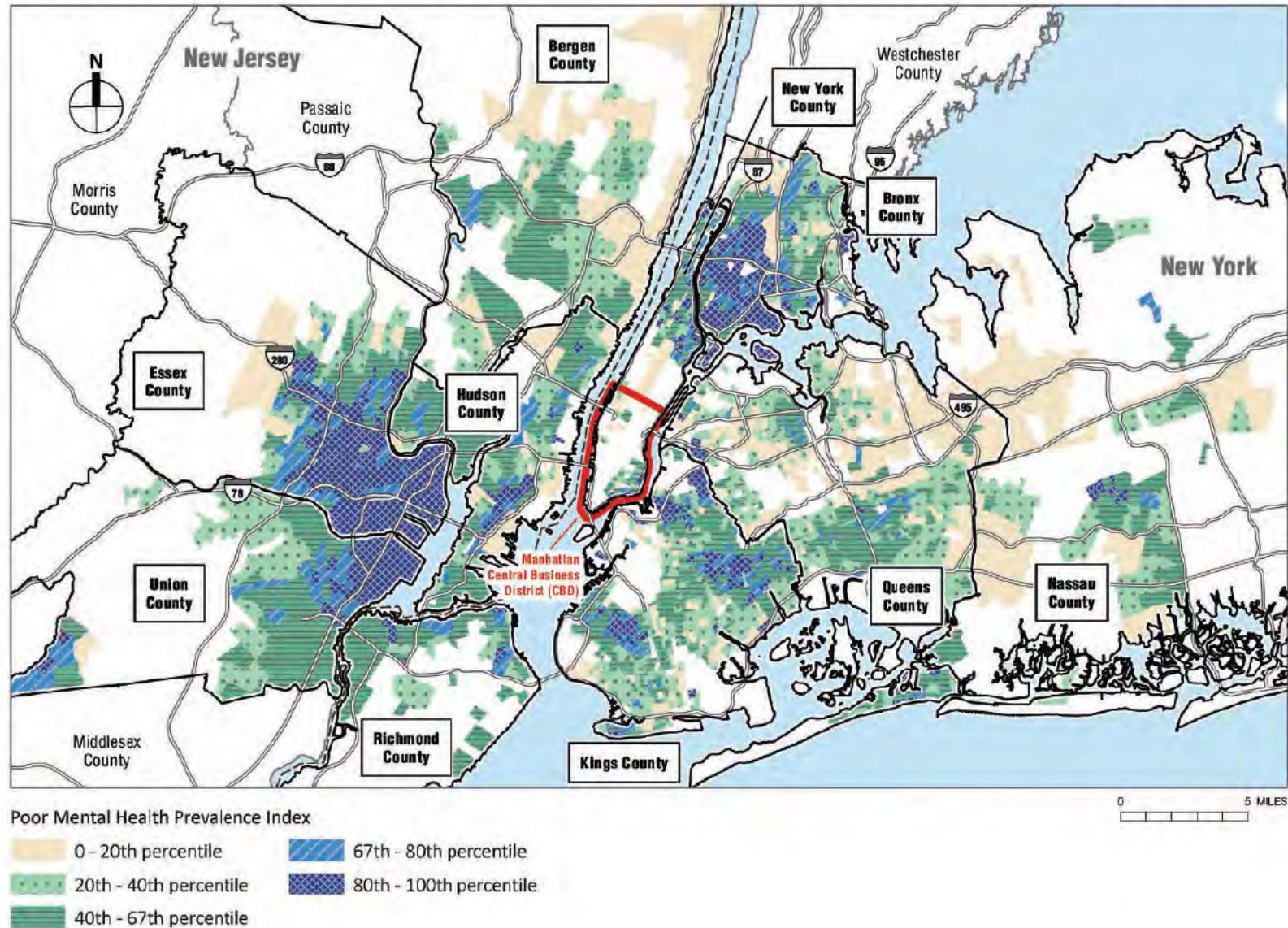
Source: CDC EJI 2022 data.



## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix B)

Figure B-9. Poor Mental Health Prevalence Among Adults in Environmental Justice Designated Census Tracts, National Percentiles



Source: CDC EJI 2022 data.

## Appendix C: Pre-Existing Tract-Level Traffic Proximity, Air Pollutant, and Chronic Disease Burdens

FIPS	State	County	Place Name	Tract	Total Population	Total Minority	% Minority	Total Population for Whom Poverty Status is Determined	Individuals Living in Poverty	% Poverty	Identified Environmental Justice Tract (Yes or No)	Traffic Proximity And Volume [Daily vehicles/meters (Percentile)]	Pollutant Burdens					Chronic Disease Burdens					
													Air Toxics Cancer Risk [Lifetime risk per million (Percentile)]	Air Toxics Respiratory Hazard Index [Ratio of exposure to health-based reference concentration (Percentile)]	Diesel Particulate Matter [µg/m3 (Percentile)]	Particulate Matter 2.5 [µg/m3 (Percentile)]	Number of Pollutant Burdens at/above 90th Percentile	Asthma [% adults (Percentile rank)]	Cancer [% adults (Percentile rank)]	Diabetes [% adults (Percentile rank)]	High Blood Pressures [% adults (Percentile rank)]	Poor Mental Health [% adults (Percentile rank)]	Number of Chronic Disease Burdens above 90th Percentile
34003002100	New Jersey	Bergen	Alpine Borough	21	1,547	733	47.38	1,547	186	12.02	Yes	300 (52)	30 (83)	0.4 (81)	0.56 (91)	8.87 (57)	1	7.7 (4)	8 (80)	10.7 (50)	33.3 (58)	9.1 (4)	0
34003003100	New Jersey	Bergen	Bergenfield Borough	31	5,545	3,583	64.62	5,545	671	12.1	Yes	210 (43)	30 (83)	0.4 (81)	0.651 (94)	9.03 (62)	1	7.8 (5)	6.2 (39)	9.6 (36)	29.8 (37)	10.3 (11)	0
34003003200	New Jersey	Bergen	Bergenfield Borough	32	4,978	3,656	73.44	4,978	1,014	20.37	Yes	880 (80)	30 (83)	0.4 (81)	0.682 (95)	9.05 (62)	1	7.7 (4)	5.6 (27)	10.3 (45)	30.2 (40)	10.9 (16)	0
34003003300	New Jersey	Bergen	Bergenfield Borough	33	6,601	4,551	68.94	6,601	697	10.56	Yes	430 (63)	30 (83)	0.4 (81)	0.666 (94)	9.04 (62)	1	7.9 (6)	6 (35)	9.6 (36)	28.6 (30)	10.8 (15)	0
34003003500	New Jersey	Bergen	Bergenfield Borough	35	3,888	3,194	82.15	3,888	1,183	30.43	Yes	440 (63)	30 (83)	0.4 (81)	0.717 (95)	9.1 (63)	1	8.4 (14)	6 (35)	11.3 (57)	31.3 (46)	12 (27)	0
34003004001	New Jersey	Bergen	Bogota Borough	40.01	3,212	2,126	66.19	3,203	535	16.7	Yes	600 (71)	30 (83)	0.5 (95)	0.96 (97)	9.2 (67)	2	9.1 (31)	6.1 (37)	10.4 (46)	30.2 (40)	13.5 (44)	0
34003004002	New Jersey	Bergen	Bogota Borough	40.02	5,148	3,196	62.08	5,148	975	18.94	Yes	2,300 (93)	30 (83)	0.5 (95)	0.976 (97)	9.22 (67)	2	8.6 (18)	5.9 (33)	9.8 (38)	30.3 (40)	12.3 (30)	0
34003006100	New Jersey	Bergen	Cliffside Park Borough	61	6,982	3,496	50.07	6,948	1,806	25.99	Yes	410 (61)	30 (83)	0.5 (95)	1.067 (97)	9.34 (71)	2	8.9 (26)	6.6 (47)	10.5 (47)	31.2 (46)	13.1 (40)	0
34003006201	New Jersey	Bergen	Cliffside Park Borough	62.01	4,335	2,119	48.88	4,335	1,145	26.41	Yes	370 (58)	30 (83)	0.5 (95)	1.077 (98)	9.33 (70)	2	9 (28)	7.6 (71)	13 (74)	34.9 (67)	13.2 (41)	0
34003006202	New Jersey	Bergen	Cliffside Park Borough	62.02	5,060	2,332	46.09	5,060	898	17.75	Yes	480 (65)	30 (83)	0.5 (95)	1.073 (98)	9.33 (70)	2	7.6 (3)	8.9 (92)	10.2 (43)	34.2 (63)	9 (3)	1
34003006300	New Jersey	Bergen	Cliffside Park Borough	63	8,749	5,736	65.56	8,749	2,620	29.95	Yes	610 (71)	30 (83)	0.5 (95)	1.116 (98)	9.33 (70)	2	8.6 (18)	5.2 (21)	8.8 (25)	26.8 (21)	13.1 (40)	0
34003007001	New Jersey	Bergen	Closter Borough	70.01	3,946	2,091	52.99	3,892	544	13.98	Yes	810 (78)	30 (83)	0.4 (81)	0.514 (88)	8.82 (56)	0	8.1 (9)	7 (56)	9.9 (40)	31.8 (49)	10.6 (13)	0
34003007002	New Jersey	Bergen	Closter Borough	70.02	4,619	2,140	46.33	4,619	226	4.89	Yes	330 (55)	30 (83)	0.4 (81)	0.527 (89)	8.84 (56)	0	7.3 (2)	6.6 (47)	8.4 (21)	28.1 (27)	8.7 (2)	0
34003010200	New Jersey	Bergen	Dumont Borough	102	4,466	2,240	50.16	4,457	538	12.07	Yes	600 (71)	30 (83)	0.4 (81)	0.634 (94)	8.98 (60)	1	8.7 (21)	6.8 (52)	9.3 (32)	30.3 (40)	12.2 (29)	0
34003011100	New Jersey	Bergen	Elmwood Park Borough	111	4,410	2,725	61.79	4,386	968	22.07	Yes	1,000 (83)	30 (83)	0.4 (81)	0.747 (96)	8.86 (57)	1	8.7 (21)	7.2 (61)	10.6 (49)	32.7 (55)	12.3 (30)	0
34003011200	New Jersey	Bergen	Elmwood Park Borough	112	4,830	2,656	54.99	4,830	1,263	26.15	Yes	1,200 (86)	30 (83)	0.4 (81)	0.756 (96)	8.87 (57)	1	8.9 (26)	6.4 (43)	9.5 (34)	29.7 (37)	13.1 (40)	0
34003012001	New Jersey	Bergen	East Rutherford Borough	120.01	6,333	3,361	53.07	6,333	1,832	28.93	Yes	1,000 (83)	30 (83)	0.5 (95)	1.061 (97)	9.24 (68)	2	9 (28)	6.1 (37)	9.8 (38)	28.8 (31)	13.5 (44)	0
34003013001	New Jersey	Bergen	Edgewater Borough	130.01	6,924	4,561	65.87	6,924	822	11.87	Yes	1,100 (84)	40 (97)	0.5 (95)	1.122 (98)	9.33 (70)	3	6.8 (0)	5.2 (21)	6.9 (8)	22.8 (7)	8.8 (3)	0
34003013002	New Jersey	Bergen	Edgewater Borough	130.02	5,479	2,780	50.74	5,474	734	13.41	Yes	1,400 (87)	30 (83)	0.5 (95)	1.08 (98)	9.32 (70)	2	7.7 (4)	5.7 (29)	7.6 (13)	25.6 (15)	10 (9)	0
34003015200	New Jersey	Bergen	Englewood	152	6,753	5,578	82.6	6,645	1,555	23.4	Yes	340 (56)	30 (83)	0.4 (81)	0.74 (95)	9.14 (65)	1	9.4 (40)	6.4 (43)	11.8 (63)	35 (68)	12 (27)	0
34003015300	New Jersey	Bergen	Englewood	153	5,659	5,386	95.18	5,640	1,670	29.61	Yes	650 (73)	30 (83)	0.4 (81)	0.78 (96)	9.19 (66)	1	10.8 (76)	5.6 (27)	14.7 (85)	39.2 (84)	14.4 (55)	0



## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

FIPS	State	County	Place Name	Tract	Total Population	Total Minority	% Minority	Total Population for Whom Poverty Status is Determined	Individuals Living in Poverty	% Poverty	Identified Environmental Justice Tract (Yes or No)	Traffic Proximity And Volume [Daily vehicles/ meters (Percentile)]	Pollutant Burdens					Chronic Disease Burdens						
													Air Toxics Cancer Risk [Lifetime risk per million (Percentile)]	Air Toxics Respiratory Hazard Index [Ratio of exposure to health-based reference concentration (Percentile)]	Diesel Particulate Matter [µg/m3 (Percentile)]	Particulate Matter 2.5 [µg/m3 (Percentile)]	Number of Pollutant Burdens at/above 90th Percentile	Asthma [% adults (Percentile rank)]	Cancer [% adults (Percentage rank)]	Diabetes [% adults (Percentile rank)]	High Blood Pressures [% adults (Percentile rank)]	Poor Mental Health [% adults (Percentage rank)]	Number of Chronic Disease Burdens above 90th Percentile	
34003015400	New Jersey	Bergen	Englewood	154	7,180	4,852	67.58	7,180	1,900	26.46	Yes	1,800 (91)	30 (83)	0.5 (95)	0.812 (96)	9.22 (67)	2	8.8 (23)	4.8 (15)	10.9 (52)	29.1 (33)	12.7 (35)	0	
34003016000	New Jersey	Bergen	Englewood Cliffs Borough	160	5,371	3,017	56.17	5,371	570	10.61	Yes	740 (76)	30 (83)	0.5 (95)	0.894 (97)	9.22 (67)	2	7 (1)	8.3 (85)	10.1 (42)	32.7 (55)	8 (1)	0	
34003018100	New Jersey	Bergen	Fairview Borough	181	7,693	5,735	74.55	7,692	1,700	22.1	Yes	680 (74)	30 (83)	0.5 (95)	1.104 (98)	9.34 (70)	2	9.2 (34)	5.2 (21)	10.3 (45)	28.8 (31)	15.3 (65)	0	
34003018200	New Jersey	Bergen	Fairview Borough	182	6,565	4,483	68.29	6,565	2,503	38.13	Yes	1,300 (87)	40 (97)	0.5 (95)	1.108 (98)	9.34 (70)	3	8.7 (21)	5.5 (26)	9.9 (40)	28.5 (30)	13.6 (46)	0	
34003019102	New Jersey	Bergen	Fort Lee Borough	191.02	3,150	2,036	64.63	3,150	656	20.83	Yes	4,000 (97)	40 (97)	0.5 (95)	1.102 (98)	9.32 (70)	3	7.2 (1)	6.5 (45)	9.1 (29)	28.3 (29)	9.1 (4)	0	
34003019103	New Jersey	Bergen	Fort Lee Borough	191.03	4,519	3,162	69.97	4,519	872	19.3	Yes	6,700 (99)	40 (97)	0.5 (95)	1.089 (98)	9.31 (70)	3	7.1 (1)	5.7 (29)	9.1 (29)	28 (27)	9.2 (4)	0	
34003019104	New Jersey	Bergen	Fort Lee Borough	191.04	4,053	2,443	60.28	4,053	992	24.48	Yes	6,300 (98)	40 (97)	0.5 (95)	1.097 (98)	9.32 (70)	3	7.3 (2)	6.2 (39)	10.5 (47)	29.8 (37)	9.9 (8)	0	
34003019202	New Jersey	Bergen	Fort Lee Borough	192.02	2,245	1,562	69.58	2,245	527	23.47	Yes	3,600 (96)	40 (97)	0.5 (95)	1.113 (98)	9.34 (70)	3	7.4 (2)	5.6 (27)	10 (41)	27.9 (26)	10 (9)	0	
34003019203	New Jersey	Bergen	Fort Lee Borough	192.03	3,159	1,692	53.56	3,159	787	24.91	Yes	15,100 (99)	40 (97)	0.5 (95)	1.099 (98)	9.33 (70)	3	7.9 (6)	10.5 (98)	13.5 (77)	40.1 (86)	9.5 (6)	1	
34003019204	New Jersey	Bergen	Fort Lee Borough	192.04	3,527	2,217	62.86	3,527	1,206	34.19	Yes	3,000 (95)	40 (97)	0.5 (95)	1.101 (98)	9.33 (70)	3	7.5 (3)	7.9 (78)	11.9 (64)	33.8 (61)	9.7 (7)	0	
34003019303	New Jersey	Bergen	Palisades Park Borough	193.03	5,558	3,599	64.75	5,558	1,028	18.5	Yes	1,300 (86)	40 (97)	0.5 (95)	1.091 (98)	9.33 (70)	3	7.4 (2)	5.8 (31)	10 (41)	28.2 (28)	10.3 (11)	0	
34003019304	New Jersey	Bergen	Fort Lee Borough	193.04	2,652	1,552	58.52	2,652	511	19.27	Yes	960 (81)	40 (97)	0.5 (95)	1.063 (97)	9.34 (70)	3	7.9 (6)	7 (56)	10.7 (50)	32.1 (51)	10.8 (15)	0	
34003019305	New Jersey	Bergen	Fort Lee Borough	193.05	6,534	2,986	45.7	6,534	732	11.2	Yes	1,500 (88)	40 (97)	0.5 (95)	1.087 (98)	9.34 (70)	3	7.5 (3)	9.9 (97)	11.2 (56)	36.5 (75)	8.4 (1)	1	
34003019306	New Jersey	Bergen	Fort Lee Borough	193.06	2,033	931	45.79	2,033	192	9.44	Yes	890 (80)	40 (97)	0.5 (95)	1.063 (97)	9.33 (70)	3	7.6 (3)	7.7 (73)	10.1 (42)	31 (45)	9.2 (4)	0	
34003021100	New Jersey	Bergen	Garfield	211	6,589	1,918	29.11	6,544	2,105	32.17	Yes	900 (80)	30 (83)	0.5 (95)	0.852 (97)	9 (61)	2	9.6 (46)	6.2 (39)	9.7 (37)	30.6 (42)	15.3 (65)	0	
34003021200	New Jersey	Bergen	Garfield	212	5,743	2,326	40.5	5,743	1,606	27.96	Yes	1,100 (84)	30 (83)	0.4 (81)	0.838 (96)	8.98 (60)	1	9.6 (46)	6 (35)	9.2 (31)	29.6 (36)	15 (62)	0	
34003021300	New Jersey	Bergen	Garfield	213	4,600	1,748	38	4,600	1,424	30.96	Yes	540 (68)	30 (83)	0.5 (95)	0.858 (97)	9.02 (61)	2	9.6 (46)	5.9 (33)	9.7 (37)	30.1 (39)	15.1 (63)	0	
34003021400	New Jersey	Bergen	Garfield	214	4,932	2,293	46.49	4,879	1,598	32.75	Yes	340 (56)	30 (83)	0.5 (95)	0.868 (97)	9.04 (62)	2	9.9 (54)	6.7 (49)	11 (54)	32.7 (55)	15.6 (68)	0	
34003021500	New Jersey	Bergen	Garfield	215	5,300	3,458	65.25	5,295	2,239	42.29	Yes	670 (74)	30 (83)	0.5 (95)	0.815 (96)	9.07 (62)	2	10 (57)	5.8 (31)	11.3 (57)	32.1 (51)	16.4 (75)	0	
34003021600	New Jersey	Bergen	Garfield	216	4,481	3,052	68.11	4,481	1,737	38.76	Yes	1,100 (84)	30 (83)	0.5 (95)	0.796 (96)	9.05 (62)	2	9.6 (46)	5 (18)	9.9 (40)	30.1 (39)	15.7 (69)	0	
34003023100	New Jersey	Bergen	Hackensack	231	3,453	2,699	78.16	3,453	1,476	42.75	Yes	1,600 (89)	30 (83)	0.5 (95)	0.886 (97)	9.13 (64)	2	8.8 (23)	4.1 (7)	9.9 (40)	29.6 (36)	13.9 (49)	0	
34003023200	New Jersey	Bergen	Hackensack	232	6,489	4,792	73.85	6,489	1,304	20.1	Yes	1,500 (88)	30 (83)	0.5 (95)	0.872 (97)	9.09 (63)	2	8.7 (21)	5.6 (27)	9.7 (37)	31.1 (45)	11.9 (26)	0	
34003023301	New Jersey	Bergen	Hackensack	233.01	2,750	1,514	55.05	2,750	464	16.87	Yes	1,100 (84)	30 (83)	0.5 (95)	0.868 (97)	9.07 (62)	2	8.9 (26)	6.9 (54)	9.4 (33)	31.8 (49)	11.6 (23)	0	

**Appendix 17D: Technical Memorandum –**

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

34003023302	New Jersey	Bergen	Hackensack	233.02	5,267	2,969	56.37	5,267	883	16.76	Yes	850 (79)	30 (83)	0.5 (95)	0.904 (97)	9.1 (63)	2	8.4 (14)	6.8 (52)	8.6 (23)	30.5 (42)	10.7 (14)	0
34003023401	New Jersey	Bergen	Hackensack	234.01	3,796	2,921	76.95	3,796	1,101	29	Yes	1,100 (84)	30 (83)	0.5 (95)	0.918 (97)	9.11 (64)	2	8.1 (9)	5.9 (33)	9.2 (31)	28.5 (30)	10.8 (15)	0
34003023402	New Jersey	Bergen	Hackensack	234.02	5,899	4,598	77.95	5,760	1,526	26.49	Yes	6,000 (98)	30 (83)	0.5 (95)	0.926 (97)	9.14 (65)	2	9.1 (31)	5.8 (31)	11.1 (55)	32.6 (54)	12.8 (36)	0
34003023501	New Jersey	Bergen	Hackensack	235.01	3,710	3,278	88.36	3,496	1,094	31.29	Yes	920 (80)	30 (83)	0.5 (95)	0.915 (97)	9.14 (65)	2	10.2 (62)	5.2 (21)	11.9 (64)	36.3 (74)	13.8 (48)	0
34003023502	New Jersey	Bergen	Hackensack	235.02	5,222	4,292	82.19	5,222	1,834	35.12	Yes	620 (72)	30 (83)	0.5 (95)	0.924 (97)	9.15 (65)	2	10.1 (60)	6.5 (45)	13.5 (77)	34.9 (67)	14.9 (61)	0
34003023601	New Jersey	Bergen	Hackensack	236.01	2,868	2,042	71.2	2,868	774	26.99	Yes	5,900 (98)	30 (83)	0.5 (95)	0.984 (97)	9.22 (67)	2	9.2 (34)	5.3 (22)	10.8 (51)	30.9 (44)	13.8 (48)	0
34003023602	New Jersey	Bergen	Hackensack	236.02	4,885	4,206	86.1	4,270	1,930	45.2	Yes	710 (75)	30 (83)	0.5 (95)	0.947 (97)	9.18 (66)	2	9.1 (31)	4.3 (9)	11.6 (61)	30.1 (39)	15.4 (66)	0
34003025100	New Jersey	Bergen	Hasbrouck Heights Borough	251	6,590	3,277	49.73	6,551	1,704	26.01	Yes	3,700 (96)	30 (83)	0.5 (95)	0.947 (97)	9.17 (66)	2	8.7 (21)	6.9 (54)	9.6 (36)	30 (39)	12.4 (32)	0
34003028001	New Jersey	Bergen	Leonia Borough	280.01	5,249	3,357	63.96	5,239	913	17.43	Yes	3,300 (96)	40 (97)	0.5 (95)	1.067 (97)	9.29 (69)	3	7.4 (2)	6 (35)	9.6 (36)	28.9 (32)	9.7 (7)	0
34003028002	New Jersey	Bergen	Leonia Borough	280.02	3,837	2,272	59.21	3,813	553	14.5	Yes	3,200 (96)	40 (97)	0.5 (95)	1.087 (98)	9.32 (70)	3	7.8 (5)	7.5 (69)	10.8 (51)	32 (51)	10 (9)	0
34003029100	New Jersey	Bergen	Little Ferry Borough	291	4,415	2,883	65.3	4,415	1,323	29.97	Yes	1,900 (91)	40 (97)	0.5 (95)	1.076 (98)	9.26 (68)	3	8.2 (10)	5.3 (22)	10.5 (47)	28.8 (31)	12.1 (28)	0
34003029200	New Jersey	Bergen	Little Ferry Borough	292	6,367	3,142	49.35	6,367	1,877	29.48	Yes	640 (72)	40 (97)	0.5 (95)	1.13 (98)	9.28 (69)	3	8.9 (26)	6.6 (47)	10.5 (47)	31.2 (46)	13.1 (40)	0
34003030100	New Jersey	Bergen	Lodi Borough	301	5,686	3,148	55.36	5,686	1,239	21.79	Yes	3,300 (96)	30 (83)	0.5 (95)	0.912 (97)	9.1 (63)	2	9.3 (37)	6.4 (43)	10.5 (47)	32.3 (52)	13.9 (49)	0
34003030200	New Jersey	Bergen	Lodi Borough	302	7,424	3,988	53.72	7,395	2,375	32.12	Yes	1,300 (86)	30 (83)	0.5 (95)	0.887 (97)	9.07 (62)	2	9.7 (49)	6.1 (37)	10.5 (47)	31.6 (48)	15.2 (64)	0
34003030300	New Jersey	Bergen	Lodi Borough	303	4,443	2,520	56.72	4,365	1,578	36.15	Yes	1,400 (88)	30 (83)	0.5 (95)	0.907 (97)	9.09 (63)	2	9.5 (43)	6.4 (43)	10.7 (50)	31.2 (46)	14.4 (55)	0
34003030400	New Jersey	Bergen	Hasbrouck Heights Borough	304	6,877	3,943	57.34	6,654	1,361	20.45	Yes	360 (58)	30 (83)	0.5 (95)	0.919 (97)	9.12 (64)	2	9 (28)	6.3 (41)	9.2 (31)	29.9 (38)	13 (39)	0
34003031100	New Jersey	Bergen	Lyndhurst Township	311	6,413	3,240	50.52	6,413	1,331	20.75	Yes	3,500 (96)	30 (83)	0.5 (95)	0.95 (97)	9.2 (67)	2	8.6 (18)	6.4 (43)	8.2 (18)	28 (27)	12.4 (32)	0
34003032104	New Jersey	Bergen	Mahwah Township	321.04	4,247	1,851	43.58	2,084	511	24.52	Yes	790 (77)	30 (83)	0.3 (47)	0.3 (62)	7.92 (31)	0	10.5 (70)	2.7 (1)	3.7 (1)	15.1 (1)	17.1 (80)	0
34003033100	New Jersey	Bergen	Maywood Borough	331	3,879	1,725	44.47	3,859	330	8.55	Yes	1,200 (85)	30 (83)	0.5 (95)	0.858 (97)	9.03 (62)	2	8.5 (16)	7.3 (64)	8.7 (24)	30.2 (40)	11.3 (20)	0
34003033300	New Jersey	Bergen	Maywood Borough	333	3,565	1,894	53.13	3,565	871	24.43	Yes	1,900 (91)	30 (83)	0.5 (95)	0.899 (97)	9.08 (63)	2	9 (28)	6.9 (54)	11.3 (57)	33.1 (57)	13 (39)	0
34003036100	New Jersey	Bergen	Teterboro Borough	361	2,677	1,521	56.82	2,677	712	26.6	Yes	2,500 (94)	30 (83)	0.5 (95)	0.985 (97)	9.2 (66)	2	9.3 (37)	6.8 (52)	11.2 (56)	33.4 (59)	14.3 (54)	0
34003036200	New Jersey	Bergen	Moonachie Borough	362	2,716	1,416	52.14	2,716	793	29.2	Yes	630 (72)	30 (83)	0.5 (95)	1.083 (98)	9.25 (68)	2	9 (28)	6.9 (54)	10.4 (46)	32.4 (53)	13.5 (44)	0
34003037202	New Jersey	Bergen	New Milford Borough	372.02	7,213	3,359	46.57	7,015	1,096	15.62	Yes	370 (59)	30 (83)	0.4 (81)	0.754 (96)	9.04 (62)	1	8.1 (9)	6.8 (52)	9.1 (29)	29.5 (36)	11 (17)	0
34003038200	New Jersey	Bergen	North Arlington Borough	382	4,248	2,227	52.42	4,248	1,133	26.67	Yes	1,400 (87)	30 (83)	0.5 (95)	0.771 (96)	9.11 (64)	2	8.7 (21)	6.4 (43)	9.3 (32)	29.2 (34)	13 (39)	0
34003041100	New Jersey	Bergen	Palisades Park Borough	411	5,915	4,973	84.07	5,915	2,161	36.53	Yes	1,000 (83)	40 (97)	0.5 (95)	1.086 (98)	9.31 (70)	3	7.1 (1)	4.3 (9)	11.5 (59)	27.1 (22)	11.3 (20)	0
34003041200	New Jersey	Bergen	Palisades Park Borough	412	4,798	3,829	79.8	4,798	1,107	23.07	Yes	2,100 (92)	40 (97)	0.5 (95)	1.091 (98)	9.33 (70)	3	6.5 (0)	4.5 (11)	9.9 (40)	26.3 (18)	9.4 (5)	0
34003041301	New Jersey	Bergen	Palisades Park Borough	413.01	5,805	4,826	83.14	5,765	1,974	34.24	Yes	4,400 (97)	40 (97)	0.5 (95)	1.075 (98)	9.34 (70)	3	7.1 (1)	4.3 (9)	9.8 (38)	26.1 (18)	11 (17)	0



## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

FIPS	State	County	Place Name	Tract	Total Population	Total Minority	% Minority	Total Population for Whom Poverty Status is Determined	Individuals Living in Poverty	% Poverty	Identified Environmental Justice Tract (Yes or No)	Traffic Proximity And Volume [Daily vehicles/ meters (Percentile)]	Pollutant Burdens					Chronic Disease Burdens						
													Air Toxics Cancer Risk [Lifetime risk per million (Percentile)]	Air Toxics Respiratory Hazard Index [Ratio of exposure to health-based reference concentration (Percentile)]	Diesel Particulate Matter [µg/m3 (Percentile)]	Particulate Matter 2.5 [µg/m3 (Percentile)]	Number of Pollutant Burdens at/above 90th Percentile	Asthma [% adults (Percentile rank)]	Cancer [% adults (Percentage rank)]	Diabetes [% adults (Percentile rank)]	High Blood Pressures [% adults (Percentile rank)]	Poor Mental Health [% adults (Percentage rank)]	Number of Chronic Disease Burdens above 90th Percentile	
34003041302	New Jersey	Bergen	Palisades Park Borough	413.02	4,086	3,252	79.59	4,086	986	24.13	Yes	2,800 (95)	40 (97)	0.5 (95)	1.077 (98)	9.33 (70)	3	7 (1)	5 (18)	9.5 (34)	27.2 (23)	10 (9)	0	
34003042100	New Jersey	Bergen	Paramus Borough	421	7,413	3,372	45.49	7,337	540	7.36	Yes	760 (76)	30 (83)	0.4 (81)	0.705 (95)	8.91 (58)	1	8 (7)	8.1 (82)	9.3 (32)	31.7 (49)	10.1 (9)	0	
34003042500	New Jersey	Bergen	Paramus Borough	425	4,505	2,540	56.38	4,481	525	11.72	Yes	2,800 (95)	30 (83)	0.5 (95)	0.813 (96)	8.95 (59)	2	7.8 (5)	7.5 (69)	9.7 (37)	30.7 (43)	9.8 (7)	0	
34003045100	New Jersey	Bergen	Ridgefield Borough	451	8,437	4,913	58.23	8,437	2,228	26.41	Yes	1,000 (82)	40 (97)	0.5 (95)	1.081 (98)	9.33 (70)	3	8.2 (10)	6.5 (45)	10.6 (49)	31 (45)	11.9 (26)	0	
34003045200	New Jersey	Bergen	Ridgefield Borough	452	2,790	1,927	69.07	2,774	841	30.32	Yes	2,500 (94)	40 (97)	0.5 (95)	1.134 (98)	9.33 (70)	3	8.1 (9)	6.3 (41)	11.4 (58)	31.9 (50)	11.9 (26)	0	
34003046100	New Jersey	Bergen	Ridgefield Park Village	461	4,386	2,661	60.67	4,386	752	17.15	Yes	4,800 (98)	40 (97)	0.5 (95)	1.072 (98)	9.3 (69)	3	8.3 (12)	5.8 (31)	8.9 (27)	27.5 (24)	11.6 (23)	0	
34003046200	New Jersey	Bergen	Ridgefield Park Village	462	3,990	2,265	56.77	3,990	659	16.52	Yes	4,600 (97)	30 (83)	0.5 (95)	1.001 (97)	9.26 (68)	2	8.4 (14)	6.1 (37)	9.1 (29)	29.7 (37)	11.7 (24)	0	
34003046300	New Jersey	Bergen	Ridgefield Park Village	463	4,546	3,048	67.05	4,546	948	20.85	Yes	1,500 (88)	40 (97)	0.5 (95)	1.091 (98)	9.28 (69)	3	8.2 (10)	6.4 (43)	9.4 (33)	29.9 (38)	11.3 (20)	0	
34003048100	New Jersey	Bergen	River Edge Borough	481	3,832	1,927	50.29	3,832	643	16.78	Yes	1,600 (89)	30 (83)	0.4 (81)	0.756 (96)	9.02 (61)	1	7.9 (6)	6.3 (41)	8.8 (25)	28.1 (27)	10.7 (14)	0	
34003051300	New Jersey	Bergen	Rutherford Borough	513	4,575	2,409	52.66	4,575	822	17.97	Yes	550 (69)	30 (83)	0.5 (95)	0.906 (97)	9.16 (65)	2	8.2 (10)	6.1 (37)	8.5 (22)	28.1 (27)	11.3 (20)	0	
34003051400	New Jersey	Bergen	Rutherford Borough	514	5,031	2,208	43.89	5,031	515	10.24	Yes	3,600 (96)	30 (83)	0.5 (95)	0.974 (97)	9.2 (67)	2	8.1 (9)	6.6 (47)	7.7 (14)	27.3 (23)	10.4 (11)	0	
34003054100	New Jersey	Bergen	Teaneck Township	541	8,251	6,866	83.21	8,090	1,208	14.93	Yes	1,700 (90)	30 (83)	0.5 (95)	0.815 (96)	9.19 (66)	2	9.8 (52)	6.6 (47)	12.2 (67)	39.3 (84)	11.3 (20)	0	
34003054200	New Jersey	Bergen	Teaneck Township	542	4,789	3,555	74.23	4,689	1,533	32.69	Yes	2,100 (92)	30 (83)	0.5 (95)	0.783 (96)	9.17 (66)	2	9.9 (54)	6.5 (45)	12.1 (66)	36.1 (73)	13 (39)	0	
34003054400	New Jersey	Bergen	Teaneck Township	544	7,434	3,952	53.16	6,669	1,194	17.9	Yes	1,600 (89)	30 (83)	0.5 (95)	0.864 (97)	9.17 (66)	2	9 (28)	6 (35)	9 (28)	28.6 (30)	12 (27)	0	
34003054600	New Jersey	Bergen	Teaneck Township	546	8,481	5,202	61.34	8,416	897	10.66	Yes	2,300 (93)	30 (83)	0.5 (95)	0.977 (97)	9.25 (68)	2	8.2 (10)	7.1 (59)	10.3 (45)	32.9 (56)	10.2 (10)	0	
34003055200	New Jersey	Bergen	Tenafly Borough	552	7,907	3,849	48.68	7,907	891	11.27	Yes	410 (61)	30 (83)	0.4 (81)	0.678 (94)	9.07 (62)	1	7.4 (2)	7 (56)	8.5 (22)	28.6 (30)	8.5 (2)	0	
34003057200	New Jersey	Bergen	Wallington Borough	572	3,603	779	21.62	3,603	970	26.92	Yes	1,400 (87)	30 (83)	0.4 (81)	0.683 (95)	9.08 (63)	1	9.8 (52)	6.4 (43)	9 (28)	29.9 (38)	15.5 (67)	0	
34013000100	New Jersey	Essex	Newark	1	6,296	5,681	90.23	6,296	2,677	42.52	Yes	280 (51)	30 (83)	0.5 (95)	0.736 (95)	9.05 (62)	2	9.8 (52)	5.4 (24)	14.5 (84)	34.6 (66)	14.6 (57)	0	
34013000200	New Jersey	Essex	Newark	2	3,378	3,161	93.58	3,361	1,956	58.2	Yes	550 (69)	30 (83)	0.5 (95)	0.788 (96)	9.03 (62)	2	10.3 (65)	5.1 (19)	16.8 (92)	36.7 (75)	16.8 (78)	1	
34013000300	New Jersey	Essex	Newark	3	3,893	3,642	93.55	3,852	2,556	66.36	Yes	720 (75)	30 (83)	0.5 (95)	0.774 (96)	9.03 (62)	2	12 (90)	5.5 (26)	18.7 (96)	40.4 (87)	19.2 (91)	3	
34013000400	New Jersey	Essex	Newark	4	2,104	1,908	90.68	2,094	1,031	49.24	Yes	540 (68)	30 (83)	0.5 (95)	0.772 (96)	9.01 (61)	2	9.9 (54)	4.9 (16)	13.3 (76)	30.5 (42)	16.2 (73)	0	
34013000500	New Jersey	Essex	Newark	5	1,970	1,832	92.99	1,970	1,084	55.03	Yes	760 (76)	30 (83)	0.5 (95)	0.839 (96)	9.01 (61)	2	10.3 (65)	3.9 (5)	13.1 (74)	29.8 (37)	18 (86)	0	
34013000600	New Jersey	Essex	Newark	6	3,721	3,255	87.48	3,721	1,505	40.45	Yes	290 (52)	30 (83)	0.5 (95)	0.827 (96)	9 (61)	2	9.7 (49)	4 (6)	11.3 (57)	26.7 (20)	16 (71)	0	
34013000700	New Jersey	Essex	Newark	7	6,165	5,919	96.01	6,165	3,258	52.85	Yes	1,100 (83)	30 (83)	0.5 (95)	0.84 (96)	9 (61)	2	11.4 (85)	4.1 (7)	14.2 (82)	33.8 (61)	17.5 (83)	0	
34013000800	New Jersey	Essex	Newark	8	4,672	4,525	96.85	4,671	2,723	58.3	Yes	670 (74)	30 (83)	0.5 (95)	0.845 (97)	9.01 (61)	2	10.4 (67)	3.8 (5)	13.7 (79)	30 (39)	17.6 (84)	0	

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

34013000900	New Jersey	Essex	Newark	9	3,392	3,353	98.85	3,392	2,323	68.48	Yes	3,800 (97)	40 (97)	0.5 (95)	0.848 (97)	9.02 (61)	3	12.1 (91)	4 (6)	15.4 (88)	37 (77)	18.9 (90)	2
34013001000	New Jersey	Essex	Newark	10	3,503	3,248	92.72	2,760	1,680	60.87	Yes	3,900 (97)	40 (97)	0.5 (95)	0.844 (97)	9.03 (62)	3	12 (90)	5.1 (19)	20 (97)	43.6 (93)	18.6 (89)	3
34013001100	New Jersey	Essex	Newark	11	3,154	2,254	71.46	1,645	762	46.32	Yes	1,500 (88)	40 (97)	0.5 (95)	0.844 (96)	9.03 (61)	3	11 (79)	2 (1)	6.7 (7)	19.7 (3)	18.9 (90)	1
34013001300	New Jersey	Essex	Newark	13	1,629	1,393	85.51	1,574	686	43.58	Yes	500 (66)	40 (97)	0.5 (95)	0.848 (97)	9 (61)	3	12.4 (93)	4.1 (7)	13.6 (78)	37.8 (80)	17.8 (85)	1
34013001400	New Jersey	Essex	Newark	14	2,816	2,765	98.19	2,816	1,520	53.98	Yes	380 (59)	40 (97)	0.5 (95)	0.843 (96)	8.99 (61)	3	13.7 (97)	4.4 (10)	16.9 (92)	41.5 (89)	20.3 (95)	3
34013001500	New Jersey	Essex	Newark	15	1,942	1,884	97.01	1,913	1,554	81.23	Yes	1,400 (88)	40 (97)	0.5 (95)	0.85 (97)	9 (61)	3	15.1 (99)	4.1 (7)	17.7 (94)	41.8 (90)	23 (99)	4
34013001600	New Jersey	Essex	Newark	16	1,832	1,732	94.54	1,815	1,225	67.49	Yes	4,500 (97)	30 (83)	0.5 (95)	0.842 (96)	9 (61)	2	12.2 (92)	4.6 (12)	15.7 (89)	39.6 (85)	17.6 (84)	1
34013001700	New Jersey	Essex	Newark	17	2,156	2,156	100	2,156	1,360	63.08	Yes	2,100 (92)	30 (83)	0.5 (95)	0.831 (96)	8.99 (61)	2	13.6 (97)	4.8 (15)	16.7 (92)	43.4 (93)	19.2 (91)	4
34013001800	New Jersey	Essex	Newark	18	2,188	2,188	100	2,188	1,326	60.6	Yes	800 (77)	30 (83)	0.5 (95)	0.829 (96)	8.98 (60)	2	14 (98)	4.8 (15)	18.3 (95)	43 (92)	20 (94)	4
34013001900	New Jersey	Essex	Newark	19	1,955	1,914	97.9	1,955	1,346	68.85	Yes	7,900 (99)	30 (83)	0.5 (95)	0.815 (96)	8.96 (60)	2	15 (99)	4.4 (10)	18.2 (95)	42.3 (91)	22.4 (98)	4
34013002000	New Jersey	Essex	Newark	20	4,231	4,231	100	4,231	1,691	39.97	Yes	880 (79)	30 (83)	0.5 (95)	0.726 (95)	8.91 (58)	2	12.7 (94)	5.8 (31)	16.2 (90)	43.4 (93)	15.7 (69)	3
34013002100	New Jersey	Essex	Newark	21	3,185	3,101	97.36	3,185	1,226	38.49	Yes	950 (81)	30 (83)	0.5 (95)	0.716 (95)	8.9 (58)	2	12.2 (92)	5.3 (22)	15.1 (86)	41.4 (89)	15.5 (67)	1
34013002201	New Jersey	Essex	Newark	22.01	8,704	8,081	92.84	8,704	4,405	50.61	Yes	53 (18)	30 (83)	0.4 (81)	0.632 (94)	8.88 (57)	1	11.4 (85)	5.1 (19)	15.5 (88)	37.8 (80)	16.9 (79)	0
34013002202	New Jersey	Essex	Newark	22.02	3,385	3,375	99.7	3,382	1,647	48.7	Yes	440 (63)	30 (83)	0.4 (81)	0.673 (94)	8.9 (58)	1	12.4 (93)	5 (18)	14.1 (81)	39.3 (84)	15.8 (70)	1
34013002300	New Jersey	Essex	Newark	23	4,917	4,879	99.23	4,917	1,619	32.93	Yes	680 (74)	30 (83)	0.5 (95)	0.754 (96)	8.92 (58)	2	12.2 (92)	5 (18)	14.6 (84)	42.2 (91)	15.4 (66)	2
34013002400	New Jersey	Essex	Newark	24	2,979	2,822	94.73	2,979	1,273	42.73	Yes	610 (71)	30 (83)	0.5 (95)	0.789 (96)	8.93 (59)	2	13 (95)	4.6 (12)	15.2 (87)	41.1 (88)	17.4 (82)	1
34013002500	New Jersey	Essex	Newark	25	4,590	4,520	98.47	4,559	2,302	50.49	Yes	1,800 (91)	30 (83)	0.5 (95)	0.8 (96)	8.94 (59)	2	13.2 (96)	5.1 (19)	17.5 (94)	44.5 (94)	17.7 (84)	3
34013002600	New Jersey	Essex	Newark	26	1,564	1,564	100	1,483	834	56.24	Yes	1,100 (83)	30 (83)	0.5 (95)	0.824 (96)	8.97 (60)	2	13.1 (96)	4.3 (9)	16.7 (92)	42 (90)	19.5 (92)	4
34013002800	New Jersey	Essex	Newark	28	1,898	1,898	100	1,856	1,062	57.22	Yes	630 (72)	30 (83)	0.5 (95)	0.845 (97)	8.99 (61)	2	14 (98)	4 (6)	15.8 (89)	41.5 (89)	20.7 (96)	2
34013003100	New Jersey	Essex	Newark	31	2,092	2,089	99.86	2,066	1,364	66.02	Yes	780 (77)	40 (97)	0.5 (95)	0.87 (97)	9.01 (61)	3	14 (98)	4 (6)	14.3 (82)	38.1 (81)	19.5 (92)	2
34013003500	New Jersey	Essex	Newark	35	2,270	2,258	99.47	2,270	997	43.92	Yes	500 (66)	30 (83)	0.5 (95)	0.824 (96)	8.97 (60)	2	13.3 (96)	4.3 (9)	15.3 (87)	40.7 (88)	18.7 (89)	1
34013003700	New Jersey	Essex	Newark	37	1,874	1,806	96.37	1,874	943	50.32	Yes	490 (66)	30 (83)	0.5 (95)	0.836 (96)	8.98 (60)	2	13.2 (96)	4.6 (12)	15.6 (88)	41.1 (88)	18.1 (86)	1
34013003800	New Jersey	Essex	Newark	38	2,218	2,204	99.37	2,218	1,127	50.81	Yes	610 (71)	40 (97)	0.5 (95)	0.849 (97)	8.99 (61)	3	13.5 (97)	4.7 (14)	16 (90)	42.1 (90)	18.1 (86)	3
34013003900	New Jersey	Essex	Newark	39	1,296	1,296	100	1,296	896	69.14	Yes	280 (51)	40 (97)	0.5 (95)	0.864 (97)	9 (61)	3	15.3 (99)	6.9 (54)	25.8 (100)	53.1 (99)	21.4 (97)	4
34013004100	New Jersey	Essex	Newark	41	3,332	3,332	100	3,250	2,310	71.08	Yes	350 (57)	30 (83)	0.5 (95)	0.843 (96)	8.99 (61)	2	14.5 (99)	4.9 (16)	20.4 (97)	46.5 (96)	21.3 (97)	4
34013004200	New Jersey	Essex	Newark	42	2,214	2,180	98.46	2,212	1,318	59.58	Yes	430 (63)	30 (83)	0.5 (95)	0.824 (96)	8.98 (60)	2	12.9 (95)	5.2 (21)	16.7 (92)	44.9 (94)	17.3 (82)	3
34013004300	New Jersey	Essex	Newark	43	2,679	2,679	100	2,679	1,578	58.9	Yes	3,000 (95)	40 (97)	0.5 (95)	0.814 (96)	8.97 (60)	3	14.5 (99)	4.7 (14)	18.9 (96)	45 (94)	21.3 (97)	4
34013004400	New Jersey	Essex	Newark	44	1,313	1,298	98.86	1,313	745	56.74	Yes	5,000 (98)	30 (83)	0.5 (95)	0.816 (96)	8.97 (60)	2	13.2 (96)	4.9 (16)	16.5 (91)	43.7 (93)	17.9 (85)	3
34013004500	New Jersey	Essex	Newark	45	2,981	2,959	99.26	2,981	1,378	46.23	Yes	5,600 (98)	30 (83)	0.5 (95)	0.807 (96)	8.95 (60)	2	12.5 (93)	5.6 (27)	16.9 (92)	42.5 (91)	16 (71)	3
34013004600	New Jersey	Essex	Newark	46	2,977	2,953	99.19	2,977	1,584	53.21	Yes	980 (82)	40 (97)	0.5 (95)	0.816 (96)	8.96 (60)	3	12.9 (95)	5.1 (19)	16.1 (90)	43 (92)	16.7 (77)	3

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

FIPS	State	County	Place Name	Tract	Total Population	Total Minority	% Minority	Total Population for Whom Poverty Status is Determined	Individuals Living in Poverty	% Poverty	Identified Environmental Justice Tract (Yes or No)	Traffic Proximity And Volume [Daily vehicles/ meters (Percentile)]	Pollutant Burdens					Chronic Disease Burdens						
													Air Toxics Cancer Risk [Lifetime risk per million (Percentile)]	Air Toxics Respiratory Hazard Index [Ratio of exposure to health-based reference concentration (Percentile)]	Diesel Particulate Matter [µg/m3 (Percentile)]	Particulate Matter 2.5 [µg/m3 (Percentile)]	Number of Pollutant Burdens at/above 90th Percentile	Asthma [% adults (Percentile rank)]	Cancer [% adults (Percentage rank)]	Diabetes [% adults (Percentile rank)]	High Blood Pressures [% adults (Percentile rank)]	Poor Mental Health [% adults (Percentage rank)]	Number of Chronic Disease Burdens above 90th Percentile	
34013004700	New Jersey	Essex	Newark	47	4,981	4,907	98.51	4,970	1,515	30.48	Yes	910 (80)	40 (97)	0.5 (95)	0.816 (96)	8.97 (60)	3	12 (90)	5.6 (27)	15.1 (86)	41.8 (90)	14.5 (56)	2	
34013004801	New Jersey	Essex	Newark	48.01	2,279	2,263	99.3	2,279	1,186	52.04	Yes	9,300 (99)	40 (97)	0.5 (95)	0.854 (97)	8.99 (61)	3	13.6 (97)	4.5 (11)	16 (90)	41.5 (89)	18.8 (90)	3	
34013004802	New Jersey	Essex	Newark	48.02	2,670	2,565	96.07	2,627	2,017	76.78	Yes	690 (74)	40 (97)	0.5 (95)	0.829 (96)	8.98 (60)	3	14.5 (99)	5.7 (29)	25.8 (100)	51 (99)	22.4 (98)	4	
34013004900	New Jersey	Essex	Newark	49	3,276	3,252	99.27	3,276	1,692	51.65	Yes	1,400 (87)	40 (97)	0.5 (95)	0.832 (96)	8.99 (61)	3	12.8 (95)	5.6 (27)	17.1 (93)	43.7 (93)	16.5 (76)	3	
34013005000	New Jersey	Essex	Newark	50	2,774	2,737	98.67	2,774	1,697	61.18	Yes	5,700 (98)	40 (97)	0.5 (95)	0.871 (97)	8.99 (61)	3	14.2 (98)	4 (6)	15.8 (89)	38.7 (82)	21 (96)	2	
34013005100	New Jersey	Essex	Newark	51	2,171	2,158	99.4	2,171	1,101	50.71	Yes	6,500 (98)	40 (97)	0.5 (95)	0.84 (96)	8.98 (60)	3	13.5 (97)	5.6 (27)	18 (94)	44 (93)	17.8 (85)	3	
34013005200	New Jersey	Essex	Newark	52	1,307	1,296	99.16	1,306	803	61.49	Yes	4,000 (97)	40 (97)	0.5 (95)	0.823 (96)	8.98 (60)	3	13.1 (96)	5.1 (19)	17.1 (93)	42.6 (91)	17.6 (84)	3	
34013005300	New Jersey	Essex	Newark	53	2,290	2,224	97.12	2,273	1,189	52.31	Yes	3,200 (96)	40 (97)	0.5 (95)	0.834 (96)	8.98 (60)	3	13.6 (97)	4.8 (15)	17.6 (94)	44.7 (94)	19 (91)	4	
34013005400	New Jersey	Essex	Newark	54	4,178	4,155	99.45	4,140	3,161	76.35	Yes	1,400 (87)	40 (97)	0.5 (95)	0.85 (97)	8.99 (61)	3	15.1 (99)	4.1 (7)	18.3 (95)	42.2 (91)	23.7 (99)	4	
34013005700	New Jersey	Essex	Newark	57	2,225	1,838	82.61	2,225	988	44.4	Yes	2,400 (94)	40 (97)	0.6 (98)	0.935 (97)	9.01 (61)	3	11.1 (81)	3.5 (3)	11.2 (56)	30.2 (40)	18 (86)	0	
34013006200	New Jersey	Essex	Newark	62	1,696	1,654	97.52	1,696	1,019	60.08	Yes	410 (61)	40 (97)	0.5 (95)	0.907 (97)	9.01 (61)	3	13.2 (96)	5.1 (19)	16.7 (92)	42.6 (91)	17.9 (85)	3	
34013006400	New Jersey	Essex	Newark	64	1,154	1,079	93.5	1,154	278	24.09	Yes	1,600 (89)	40 (97)	0.5 (95)	0.855 (97)	9.02 (61)	3	10.5 (70)	5.5 (26)	12.4 (69)	37.9 (80)	11.3 (20)	0	
34013006600	New Jersey	Essex	Newark	66	1,481	1,454	98.18	1,481	751	50.71	Yes	440 (63)	40 (97)	0.5 (95)	0.909 (97)	9.02 (61)	3	12.5 (93)	5.1 (19)	15.9 (89)	40.8 (88)	16.7 (77)	1	
34013006700	New Jersey	Essex	Newark	67	3,955	3,819	96.56	3,804	2,199	57.81	Yes	2,200 (93)	40 (97)	0.6 (98)	0.94 (97)	9.03 (61)	3	11.7 (88)	5.6 (27)	20.4 (97)	43.6 (93)	18 (86)	2	
34013006800	New Jersey	Essex	Newark	68	5,811	4,411	75.91	5,811	2,284	39.3	Yes	1,500 (88)	40 (97)	0.6 (98)	0.972 (97)	9.04 (62)	3	10.3 (65)	3.5 (3)	9.5 (34)	26.7 (20)	17.2 (81)	0	
34013006900	New Jersey	Essex	Newark	69	4,908	3,302	67.28	4,908	2,175	44.32	Yes	440 (63)	40 (97)	0.6 (98)	0.987 (97)	9.06 (62)	3	10.3 (65)	4.5 (11)	9.9 (40)	27.8 (26)	17.3 (82)	0	
34013007000	New Jersey	Essex	Newark	70	3,765	2,067	54.9	3,765	1,821	48.37	Yes	220 (45)	40 (97)	0.6 (98)	1.003 (97)	9.06 (62)	3	10.7 (74)	5.1 (19)	11.2 (56)	30.1 (39)	18.1 (86)	0	
34013007100	New Jersey	Essex	Newark	71	4,428	2,212	49.95	4,360	1,697	38.92	Yes	1,100 (83)	40 (97)	0.6 (98)	1.04 (97)	9.08 (63)	3	10.8 (76)	5.1 (19)	9.9 (40)	27.2 (23)	18.3 (88)	0	
34013007200	New Jersey	Essex	Newark	72	3,849	2,236	58.09	3,849	1,470	38.19	Yes	1,100 (84)	40 (97)	0.6 (98)	1.029 (97)	9.08 (63)	3	10.5 (70)	5.3 (22)	9.6 (36)	28.2 (28)	16.7 (77)	0	
34013007300	New Jersey	Essex	Newark	73	5,438	2,626	48.29	5,425	2,150	39.63	Yes	1,200 (85)	40 (97)	0.6 (98)	1.006 (97)	9.09 (63)	3	11 (79)	4.8 (15)	10.7 (50)	29 (33)	18.8 (90)	1	
34013007400	New Jersey	Essex	Newark	74	5,388	3,739	69.4	2,818	1,221	43.33	Yes	4,900 (98)	40 (97)	0.6 (98)	1.224 (98)	9.1 (64)	3	10.4 (67)	3.1 (2)	9.6 (36)	29.1 (33)	18.7 (89)	0	
34013007501	New Jersey	Essex	Newark	75.01	4,665	3,408	73.05	4,653	3,515	75.54	Yes	1,100 (83)	40 (97)	0.5 (95)	1.053 (97)	9.12 (64)	3	11.9 (90)	4.2 (8)	14.9 (85)	32.4 (53)	21.7 (97)	2	
34013007502	New Jersey	Essex	Newark	75.02	2,573	2,168	84.26	2,564	1,447	56.44	Yes	3,400 (96)	40 (97)	0.6 (98)	1.257 (98)	9.13 (64)	3	11.6 (87)	4.4 (10)	14.1 (81)	32.6 (54)	20.1 (94)	1	
34013007600	New Jersey	Essex	Newark	76	3,508	2,489	70.95	3,489	1,701	48.75	Yes	1,400 (87)	40 (97)	0.5 (95)	0.956 (97)	9.09 (63)	3	10.8 (76)	4.3 (9)	10.1 (42)	28.2 (28)	18.6 (89)	0	
34013007700	New Jersey	Essex	Newark	77	2,701	1,786	66.12	2,701	1,286	47.61	Yes	670 (73)	40 (97)	0.6 (98)	0.962 (97)	9.08 (63)	3	10.4 (67)	5.2 (21)	10.7 (50)	29.9 (38)	17.3 (82)	0	



**Appendix 17D: Technical Memorandum –**

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

34013007800	New Jersey	Essex	Newark	78	3,600	2,307	64.08	3,600	1,920	53.33	Yes	730 (75)	40 (97)	0.6 (98)	0.965 (97)	9.06 (62)	3	10.9 (77)	4.5 (11)	12.2 (67)	29.2 (34)	19.8 (93)	1
34013007900	New Jersey	Essex	Newark	79	3,659	2,312	63.19	3,643	1,637	44.94	Yes	1,700 (90)	40 (97)	0.5 (95)	0.929 (97)	9.07 (63)	3	10.4 (67)	4.8 (15)	11.9 (64)	29.3 (34)	17.7 (84)	0
34013008000	New Jersey	Essex	Newark	80	2,356	1,793	76.1	2,356	1,336	56.71	Yes	3,100 (95)	40 (97)	0.5 (95)	0.907 (97)	9.05 (62)	3	10.2 (62)	3.7 (4)	11.3 (57)	30.2 (40)	15.9 (71)	0
34013008100	New Jersey	Essex	Newark	81	3,714	3,552	95.64	3,714	2,215	59.64	Yes	1,100 (84)	40 (97)	0.5 (95)	0.909 (97)	9.04 (62)	3	12.9 (95)	6.6 (47)	22 (98)	48.5 (97)	17.5 (83)	3
34013008200	New Jersey	Essex	Newark	82	2,289	2,130	93.05	1,964	1,510	76.88	Yes	1,400 (87)	40 (97)	0.5 (95)	0.851 (97)	9.02 (61)	3	13.3 (96)	4.7 (14)	17.7 (94)	40.9 (88)	19.1 (91)	3
34013008700	New Jersey	Essex	Newark	87	3,564	3,391	95.15	3,543	1,684	47.53	Yes	2,300 (93)	30 (83)	0.5 (95)	0.844 (97)	9.05 (62)	2	9.5 (43)	3.7 (4)	11.8 (63)	28.2 (28)	15.3 (65)	0
34013008800	New Jersey	Essex	Newark	88	1,852	1,845	99.62	1,832	1,002	54.69	Yes	2,500 (94)	30 (83)	0.5 (95)	0.844 (97)	9.05 (62)	2	10.2 (62)	3.4 (3)	13.3 (76)	29.5 (36)	17.7 (84)	0
34013008900	New Jersey	Essex	Newark	89	2,035	1,988	97.69	2,035	1,106	54.35	Yes	1,700 (90)	30 (83)	0.5 (95)	0.839 (96)	9.04 (62)	2	10.4 (67)	3.5 (3)	13.7 (79)	28.7 (31)	18.2 (87)	0
34013009000	New Jersey	Essex	Newark	90	1,787	1,672	93.56	1,704	868	50.94	Yes	4,600 (97)	40 (97)	0.5 (95)	0.842 (96)	9.03 (62)	3	11.2 (82)	5.4 (24)	14.8 (85)	38.2 (81)	14.8 (59)	0
34013009100	New Jersey	Essex	Newark	91	3,116	2,884	92.55	3,116	1,836	58.92	Yes	1,400 (87)	30 (83)	0.5 (95)	0.839 (96)	9.03 (62)	2	9.6 (46)	3.6 (3)	12.5 (69)	29.4 (35)	16.3 (74)	0
34013009200	New Jersey	Essex	Newark	92	3,062	2,767	90.37	2,574	1,497	58.16	Yes	1,900 (91)	30 (83)	0.5 (95)	0.842 (96)	9.06 (62)	2	12.1 (91)	5 (18)	18.4 (95)	38.9 (83)	19.4 (92)	3
34013009300	New Jersey	Essex	Newark	93	5,017	4,859	96.85	5,017	2,995	59.7	Yes	720 (75)	30 (83)	0.5 (95)	0.8 (96)	9.06 (62)	2	9.8 (52)	4 (6)	13.6 (78)	30.7 (43)	15.9 (71)	0
34013009400	New Jersey	Essex	Newark	94	5,973	5,084	85.12	5,973	2,798	46.84	Yes	550 (69)	30 (83)	0.5 (95)	0.803 (96)	9.05 (62)	2	9.8 (52)	5.5 (26)	14.5 (84)	35.3 (69)	14.4 (55)	0
34013009500	New Jersey	Essex	Newark	95	5,514	4,820	87.41	5,514	2,708	49.11	Yes	360 (57)	30 (83)	0.5 (95)	0.745 (96)	9.06 (62)	2	10.3 (65)	5.2 (21)	16.2 (90)	34.1 (63)	16.5 (76)	1
34013009600	New Jersey	Essex	Newark	96	5,443	5,162	94.84	5,443	3,415	62.74	Yes	2,900 (95)	30 (83)	0.5 (95)	0.754 (96)	9.07 (63)	2	10.8 (76)	3.7 (4)	13 (74)	31.6 (48)	17.3 (82)	0
34013009700	New Jersey	Essex	Newark	97	5,297	5,234	98.81	5,297	2,725	51.44	Yes	290 (52)	30 (83)	0.5 (95)	0.739 (95)	9.07 (62)	2	10.1 (60)	3.8 (5)	13.6 (78)	30.7 (43)	17.2 (81)	0
34013009900	New Jersey	Essex	East Orange	99	2,348	2,328	99.15	2,348	948	40.37	Yes	860 (79)	30 (83)	0.5 (95)	0.699 (95)	8.92 (58)	2	12 (90)	7.1 (59)	17.8 (94)	47 (96)	14.3 (54)	3
34013010000	New Jersey	Essex	East Orange	100	2,983	2,887	96.78	2,941	525	17.85	Yes	710 (75)	30 (83)	0.5 (95)	0.735 (95)	8.92 (59)	2	11.2 (82)	5.5 (26)	13.1 (74)	39.7 (85)	13 (39)	0
34013010100	New Jersey	Essex	East Orange	101	2,668	2,626	98.43	2,650	882	33.28	Yes	4,300 (97)	30 (83)	0.5 (95)	0.749 (96)	8.95 (59)	2	12.3 (92)	5.2 (21)	14.4 (83)	40.5 (87)	15.4 (66)	1
34013010200	New Jersey	Essex	East Orange	102	4,594	4,513	98.24	4,375	1,628	37.21	Yes	2,000 (92)	30 (83)	0.5 (95)	0.809 (96)	8.97 (60)	2	11.8 (89)	7.4 (66)	17.8 (94)	47.3 (97)	13.5 (44)	2
34013010300	New Jersey	Essex	East Orange	103	3,171	3,077	97.04	2,920	1,137	38.94	Yes	2,700 (95)	30 (83)	0.5 (95)	0.828 (96)	8.98 (60)	2	11.8 (89)	5.7 (29)	15.2 (87)	41.9 (90)	14.8 (59)	1
34013010400	New Jersey	Essex	East Orange	104	4,740	4,666	98.44	4,644	2,079	44.77	Yes	2,100 (92)	30 (83)	0.5 (95)	0.802 (96)	8.94 (59)	2	12.6 (94)	5.2 (21)	15.9 (89)	42.7 (91)	16.1 (72)	2
34013010500	New Jersey	Essex	East Orange	105	4,763	4,696	98.59	4,696	2,155	45.89	Yes	1,200 (85)	30 (83)	0.5 (95)	0.79 (96)	8.93 (59)	2	12.8 (95)	5.1 (19)	16.4 (91)	42.5 (91)	17.2 (81)	3
34013010600	New Jersey	Essex	East Orange	106	4,331	4,230	97.67	4,286	2,603	60.73	Yes	5,400 (98)	30 (83)	0.5 (95)	0.81 (96)	8.95 (59)	2	13.3 (96)	4.6 (12)	16.3 (91)	41.8 (90)	18.7 (89)	3
34013010700	New Jersey	Essex	East Orange	107	3,561	3,513	98.65	3,377	1,910	56.56	Yes	5,500 (98)	30 (83)	0.5 (95)	0.826 (96)	8.98 (60)	2	12.6 (94)	5.4 (24)	17.1 (93)	43.3 (92)	17.1 (80)	3
34013010800	New Jersey	Essex	East Orange	108	2,978	2,978	100	2,932	1,544	52.66	Yes	1,400 (87)	30 (83)	0.5 (95)	0.835 (96)	8.99 (61)	2	12.6 (94)	4.6 (12)	14.6 (84)	37.8 (80)	17.3 (82)	1
34013010900	New Jersey	Essex	East Orange	109	2,265	2,239	98.85	2,241	857	38.24	Yes	5,600 (98)	30 (83)	0.5 (95)	0.821 (96)	8.97 (60)	2	12.8 (95)	5.8 (31)	16.9 (92)	44.7 (94)	16.4 (75)	3
34013011100	New Jersey	Essex	East Orange	111	3,921	3,863	98.52	3,908	1,991	50.95	Yes	11,300 (99)	40 (97)	0.5 (95)	0.807 (96)	8.95 (60)	3	12.7 (94)	5.3 (22)	16.8 (92)	42.2 (91)	17.7 (84)	3
34013011200	New Jersey	Essex	East Orange	112	2,952	2,894	98.04	2,952	1,638	55.49	Yes	3,500 (96)	30 (83)	0.5 (95)	0.797 (96)	8.94 (59)	2	13.1 (96)	4.8 (15)	16.7 (92)	42.3 (91)	18.4 (88)	3
34013011300	New Jersey	Essex	East Orange	113	4,124	4,090	99.18	4,117	1,485	36.07	Yes	3,800 (97)	30 (83)	0.5 (95)	0.775 (96)	8.92 (59)	2	12.8 (95)	4.2 (8)	12.8 (72)	37.2 (77)	16.9 (79)	1

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

FIPS	State	County	Place Name	Tract	Total Population	Total Minority	% Minority	Total Population for Whom Poverty Status is Determined	Individuals Living in Poverty	% Poverty	Identified Environmental Justice Tract (Yes or No)	Traffic Proximity And Volume [Daily vehicles/ meters (Percentile)]	Pollutant Burdens					Chronic Disease Burdens						
													Air Toxics Cancer Risk [Lifetime risk per million (Percentile)]	Air Toxics Respiratory Hazard Index [Ratio of exposure to health-based reference concentration (Percentile)]	Diesel Particulate Matter [µg/m3 (Percentile)]	Particulate Matter 2.5 [µg/m3 (Percentile)]	Number of Pollutant Burdens at/above 90th Percentile	Asthma [% adults (Percentile rank)]	Cancer [% adults (Percentage rank)]	Diabetes [% adults (Percentile rank)]	High Blood Pressures [% adults (Percentile rank)]	Poor Mental Health [% adults (Percentage rank)]	Number of Chronic Disease Burdens above 90th Percentile	
34013011400	New Jersey	Essex	East Orange	114	4,369	4,111	94.09	4,244	1,040	24.51	Yes	770 (77)	30 (83)	0.5 (95)	0.716 (95)	8.9 (58)	2	11.4 (85)	6.5 (45)	14.8 (85)	42.8 (92)	13 (39)	1	
34013011500	New Jersey	Essex	East Orange	115	2,230	2,213	99.24	2,218	792	35.71	Yes	650 (73)	30 (83)	0.5 (95)	0.763 (96)	8.91 (58)	2	12.8 (95)	5.2 (21)	14.9 (85)	41.1 (88)	16.7 (77)	1	
34013011600	New Jersey	Essex	East Orange	116	3,213	3,173	98.76	3,193	1,758	55.06	Yes	1,000 (82)	30 (83)	0.5 (95)	0.792 (96)	8.93 (59)	2	13.4 (97)	4.9 (16)	16.2 (90)	42.4 (91)	17.7 (84)	3	
34013011700	New Jersey	Essex	East Orange	117	2,813	2,629	93.46	2,682	1,078	40.19	Yes	2,700 (95)	30 (83)	0.5 (95)	0.798 (96)	8.93 (59)	2	12.7 (94)	5.7 (29)	17.4 (93)	46 (95)	16.4 (75)	3	
34013011800	New Jersey	Essex	East Orange	118	2,350	2,314	98.47	2,332	753	32.29	Yes	690 (74)	30 (83)	0.5 (95)	0.786 (96)	8.93 (59)	2	12.2 (92)	5.2 (21)	13.7 (79)	40.3 (87)	14.6 (57)	1	
34013011900	New Jersey	Essex	Irvington Township	119	1,629	1,570	96.38	1,629	710	43.59	Yes	6,700 (99)	30 (83)	0.5 (95)	0.785 (96)	8.94 (59)	2	12.7 (94)	4.6 (12)	15.1 (86)	41 (88)	17.4 (82)	1	
34013012000	New Jersey	Essex	Irvington Township	120	6,126	6,029	98.42	5,944	2,386	40.14	Yes	3,000 (95)	30 (83)	0.4 (81)	0.69 (95)	8.88 (57)	1	12.4 (93)	5.1 (19)	14.9 (85)	41.2 (89)	16.2 (73)	1	
34013012100	New Jersey	Essex	Irvington Township	121	3,991	3,934	98.57	3,991	1,609	40.32	Yes	930 (81)	30 (83)	0.4 (81)	0.682 (95)	8.89 (58)	1	11.8 (89)	4 (6)	12.4 (69)	34.3 (64)	16.7 (77)	0	
34013012200	New Jersey	Essex	Irvington Township	122	5,326	5,069	95.17	5,326	2,395	44.97	Yes	1,100 (84)	30 (83)	0.4 (81)	0.692 (95)	8.9 (58)	1	12 (90)	4.4 (10)	13.8 (79)	37.7 (79)	16.6 (77)	1	
34013012300	New Jersey	Essex	Irvington Township	123	4,598	4,493	97.72	4,576	1,750	38.24	Yes	520 (68)	30 (83)	0.5 (95)	0.743 (96)	8.92 (58)	2	12 (90)	4.8 (15)	14.3 (82)	40.1 (86)	15.6 (68)	1	
34013012400	New Jersey	Essex	Irvington Township	124	4,424	4,244	95.93	4,424	2,392	54.07	Yes	6,000 (98)	30 (83)	0.5 (95)	0.755 (96)	8.91 (58)	2	12.7 (94)	5.7 (29)	18.8 (96)	45.9 (95)	17 (80)	3	
34013012500	New Jersey	Essex	Irvington Township	125	3,928	3,894	99.13	3,928	1,610	40.99	Yes	1,900 (91)	30 (83)	0.5 (95)	0.792 (96)	8.94 (59)	2	12.8 (95)	5.6 (27)	16.8 (92)	44.6 (94)	16.7 (77)	3	
34013012600	New Jersey	Essex	Irvington Township	126	3,064	3,027	98.79	3,043	1,473	48.41	Yes	6,400 (98)	40 (97)	0.5 (95)	0.804 (96)	8.95 (60)	3	12.7 (94)	4.7 (14)	14.5 (84)	42.3 (91)	17 (80)	2	
34013012700	New Jersey	Essex	Irvington Township	127	4,080	3,942	96.62	4,080	1,673	41	Yes	3,200 (96)	30 (83)	0.5 (95)	0.782 (96)	8.93 (59)	2	12.6 (94)	5.1 (19)	15.7 (89)	42.7 (91)	16.3 (74)	2	
34013012800	New Jersey	Essex	Irvington Township	128	3,464	3,341	96.45	3,464	1,272	36.72	Yes	5,400 (98)	30 (83)	0.5 (95)	0.789 (96)	8.94 (59)	2	12.1 (91)	4.8 (15)	14.6 (84)	40.4 (87)	15.6 (68)	1	
34013012900	New Jersey	Essex	Irvington Township	129	3,652	3,652	100	3,623	2,070	57.14	Yes	6,700 (99)	30 (83)	0.5 (95)	0.793 (96)	8.94 (59)	2	13.6 (97)	4.7 (14)	17.3 (93)	45.9 (95)	19 (91)	4	
34013013000	New Jersey	Essex	Irvington Township	130	1,884	1,853	98.35	1,884	423	22.45	Yes	7,000 (99)	30 (83)	0.5 (95)	0.81 (96)	8.95 (59)	2	10.5 (70)	4.7 (14)	11.4 (58)	37.4 (78)	12.3 (30)	0	
34013013100	New Jersey	Essex	Irvington Township	131	2,185	2,180	99.77	2,185	1,213	55.51	Yes	1,900 (91)	30 (83)	0.5 (95)	0.81 (96)	8.96 (60)	2	13 (95)	4.8 (15)	16.4 (91)	42.5 (91)	17.9 (85)	3	
34013013200	New Jersey	Essex	Irvington Township	132	2,156	2,126	98.61	2,156	1,291	59.88	Yes	4,400 (97)	30 (83)	0.5 (95)	0.817 (96)	8.97 (60)	2	13.7 (97)	4.4 (10)	16.4 (91)	44.2 (94)	19.5 (92)	4	
34013013300	New Jersey	Essex	Irvington Township	133	3,572	3,558	99.61	3,572	1,995	55.85	Yes	5,600 (98)	40 (97)	0.5 (95)	0.82 (96)	8.96 (60)	3	13.6 (97)	5.4 (24)	19.1 (96)	44.6 (94)	18.9 (90)	4	
34013013700	New Jersey	Essex	Nutley Township	137	4,550	1,533	33.69	4,518	1,531	33.89	Yes	560 (69)	30 (83)	0.5 (95)	0.738 (95)	9.05 (62)	2	9.2 (34)	7.6 (71)	10.2 (43)	32.3 (52)	12.8 (36)	0	
34013014000	New Jersey	Essex	Belleville Township	140	3,817	1,966	51.51	3,817	345	9.04	Yes	360 (57)	30 (83)	0.5 (95)	0.747 (96)	9.02 (61)	2	8.2 (10)	6.8 (52)	9.6 (36)	30.2 (40)	10.8 (15)	0	
34013014100	New Jersey	Essex	Belleville Township	141	3,511	2,138	60.89	3,511	732	20.85	Yes	350 (57)	30 (83)	0.4 (81)	0.738 (95)	9.05 (62)	1	8.7 (21)	6.5 (45)	10.1 (42)	29.5 (36)	12.1 (28)	0	
34013014200	New Jersey	Essex	Belleville Township	142	4,094	2,944	71.91	4,094	221	5.4	Yes	48 (17)	30 (83)	0.4 (81)	0.728 (95)	9.07 (62)	1	8.4 (14)	6.6 (47)	9.3 (32)	29.4 (35)	11.2 (19)	0	
34013014300	New Jersey	Essex	Belleville Township	143	5,755	4,202	73.01	5,755	1,665	28.93	Yes	360 (58)	30 (83)	0.5 (95)	0.736 (95)	9.08 (63)	2	9.3 (37)	5.5 (26)	11.6 (61)	29.7 (37)	14.2 (53)	0	

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

34013014400	New Jersey	Essex	Belleville Township	144	3,488	2,699	77.38	3,488	1,234	35.38	Yes	2,300 (93)	30 (83)	0.5 (95)	0.742 (96)	9.1 (63)	2	9.1 (31)	4.6 (12)	10.4 (46)	27.6 (25)	13.8 (48)	0
34013014500	New Jersey	Essex	Belleville Township	145	4,221	3,349	79.34	4,221	1,598	37.86	Yes	690 (74)	30 (83)	0.5 (95)	0.726 (95)	9.06 (62)	2	9.3 (37)	4.8 (15)	10.6 (49)	28.3 (29)	14.3 (54)	0
34013014600	New Jersey	Essex	Belleville Township	146	4,903	3,815	77.81	4,903	1,563	31.88	Yes	190 (41)	30 (83)	0.4 (81)	0.722 (95)	9.07 (63)	1	8.8 (23)	5.2 (21)	9.8 (38)	28.1 (27)	12.5 (33)	0
34013014700	New Jersey	Essex	Belleville Township	147	6,392	4,563	71.39	6,372	1,886	29.6	Yes	320 (54)	30 (83)	0.5 (95)	0.762 (96)	9.02 (61)	2	9.2 (34)	5.7 (29)	11.6 (61)	30.7 (43)	13.8 (48)	0
34013015100	New Jersey	Essex	Bloomfield Township	151	4,542	2,460	54.16	4,495	542	12.06	Yes	2,300 (93)	30 (83)	0.4 (81)	0.702 (95)	8.99 (61)	1	9 (28)	6.4 (43)	9.3 (32)	30.2 (40)	11.8 (25)	0
34013015200	New Jersey	Essex	Bloomfield Township	152	4,370	2,669	61.08	4,370	1,262	28.88	Yes	3,300 (96)	30 (83)	0.4 (81)	0.729 (95)	8.98 (60)	1	9.2 (34)	6.4 (43)	9 (28)	28.8 (31)	12.6 (34)	0
34013015300	New Jersey	Essex	Bloomfield Township	153	2,569	1,694	65.94	2,569	332	12.92	Yes	3,100 (95)	30 (83)	0.5 (95)	0.744 (96)	9 (61)	2	9 (28)	5 (18)	8.8 (25)	27.6 (25)	11.9 (26)	0
34013015400	New Jersey	Essex	Bloomfield Township	154	5,195	2,791	53.72	4,735	1,300	27.46	Yes	2,500 (94)	30 (83)	0.5 (95)	0.732 (95)	8.96 (60)	2	9.9 (54)	5 (18)	8.9 (27)	27.6 (25)	14.4 (55)	0
34013015500	New Jersey	Essex	Bloomfield Township	155	4,417	2,630	59.54	4,417	417	9.44	Yes	1,900 (91)	30 (83)	0.5 (95)	0.753 (96)	8.99 (61)	2	8.9 (26)	5.8 (31)	8.9 (27)	28.6 (30)	11.9 (26)	0
34013015600	New Jersey	Essex	Bloomfield Township	156	4,440	2,947	66.37	4,440	803	18.09	Yes	2,600 (94)	30 (83)	0.5 (95)	0.73 (95)	8.95 (59)	2	9.3 (37)	6.5 (45)	9.5 (34)	30.6 (42)	11.8 (25)	0
34013015700	New Jersey	Essex	Bloomfield Township	157	2,596	2,025	78	2,539	1,071	42.18	Yes	8,200 (99)	30 (83)	0.5 (95)	0.747 (96)	8.97 (60)	2	10.2 (62)	5.5 (26)	12.3 (68)	32.2 (52)	14.5 (56)	0
34013015800	New Jersey	Essex	Bloomfield Township	158	4,164	2,943	70.68	4,164	1,053	25.29	Yes	1,300 (86)	30 (83)	0.5 (95)	0.756 (96)	8.99 (61)	2	9.2 (34)	5.2 (21)	9.8 (38)	28.9 (32)	12.9 (37)	0
34013015900	New Jersey	Essex	Bloomfield Township	159	5,660	4,852	85.72	5,628	2,042	36.28	Yes	430 (62)	30 (83)	0.5 (95)	0.769 (96)	9 (61)	2	10 (57)	4.8 (15)	11.6 (61)	30.7 (43)	14.7 (58)	0
34013016700	New Jersey	Essex	Montclair Township	167	2,704	1,707	63.13	2,704	681	25.18	Yes	600 (71)	30 (83)	0.4 (81)	0.668 (94)	8.91 (58)	1	10.1 (60)	5.3 (22)	10.1 (42)	31.7 (49)	12.5 (33)	0
34013016800	New Jersey	Essex	Montclair Township	168	3,591	1,802	50.18	3,582	613	17.11	Yes	820 (78)	30 (83)	0.4 (81)	0.61 (93)	8.87 (57)	1	9.3 (37)	5.4 (24)	7.7 (14)	28 (27)	11.5 (22)	0
34013017000	New Jersey	Essex	Montclair Township	170	2,688	1,420	52.83	2,631	265	10.07	Yes	220 (45)	30 (83)	0.4 (81)	0.622 (93)	8.88 (57)	1	9.2 (34)	6.4 (43)	8.6 (23)	30.5 (42)	10.1 (9)	0
34013017100	New Jersey	Essex	Montclair Township	171	2,299	2,074	90.21	2,285	1,059	46.35	Yes	550 (69)	30 (83)	0.4 (81)	0.66 (94)	8.91 (58)	1	12 (90)	4.7 (14)	13.9 (80)	37.9 (80)	16.2 (73)	1
34013017200	New Jersey	Essex	Montclair Township	172	3,310	2,371	71.63	3,302	649	19.65	Yes	140 (34)	30 (83)	0.4 (81)	0.643 (94)	8.89 (58)	1	10.9 (77)	6.8 (52)	13.3 (76)	39.1 (84)	12.2 (29)	0
34013017400	New Jersey	Essex	West Orange Township	174	5,554	2,928	52.72	5,554	242	4.36	Yes	1,100 (84)	30 (83)	0.4 (81)	0.574 (92)	8.77 (54)	1	8.4 (14)	7.6 (71)	8.9 (27)	30.9 (44)	9.8 (7)	0
34013017500	New Jersey	Essex	West Orange Township	175	6,060	3,265	53.88	6,060	676	11.16	Yes	1,600 (89)	30 (83)	0.4 (81)	0.605 (93)	8.82 (56)	1	8.7 (21)	8.3 (85)	10.1 (42)	33.8 (61)	9.9 (8)	0
34013017600	New Jersey	Essex	West Orange Township	176	4,880	3,710	76.02	4,880	1,203	24.65	Yes	200 (42)	30 (83)	0.4 (81)	0.611 (93)	8.86 (57)	1	10.1 (60)	5.9 (33)	11.5 (59)	33.7 (61)	13.6 (46)	0
34013017700	New Jersey	Essex	West Orange Township	177	4,811	4,130	85.84	4,811	2,289	47.58	Yes	440 (63)	30 (83)	0.4 (81)	0.62 (93)	8.87 (57)	1	11.3 (84)	4.3 (9)	13.4 (77)	32.9 (56)	17.5 (83)	0
34013017800	New Jersey	Essex	West Orange Township	178	3,012	2,508	83.27	2,982	1,010	33.87	Yes	3,400 (96)	30 (83)	0.4 (81)	0.633 (94)	8.84 (56)	1	9.9 (54)	5.5 (26)	11 (54)	32.7 (55)	13.7 (47)	0
34013017900	New Jersey	Essex	West Orange Township	179	3,705	1,899	51.26	3,705	301	8.12	Yes	420 (62)	30 (83)	0.4 (81)	0.623 (93)	8.83 (56)	1	9.2 (34)	6.4 (43)	9.3 (32)	31.7 (49)	10.8 (15)	0
34013018000	New Jersey	Essex	West Orange Township	180	6,178	3,236	52.38	6,062	338	5.58	Yes	420 (62)	30 (83)	0.4 (81)	0.554 (90)	8.76 (54)	1	8.4 (14)	7.5 (69)	8.9 (27)	31.4 (47)	9.2 (4)	0
34013018100	New Jersey	Essex	City of Orange Township	181	2,057	1,982	96.35	2,057	864	42	Yes	750 (76)	30 (83)	0.4 (81)	0.648 (94)	8.9 (58)	1	13.3 (96)	5.3 (22)	17.7 (94)	43.1 (92)	18.1 (86)	3
34013018200	New Jersey	Essex	City of Orange Township	182	4,176	4,096	98.08	4,176	1,108	26.53	Yes	1,200 (85)	30 (83)	0.4 (81)	0.67 (94)	8.88 (57)	1	12.6 (94)	5.4 (24)	16.7 (92)	42.4 (91)	16.8 (78)	3
34013018300	New Jersey	Essex	City of Orange Township	183	4,307	4,281	99.4	4,307	2,346	54.47	Yes	1,200 (86)	30 (83)	0.4 (81)	0.673 (94)	8.88 (57)	1	12.1 (91)	4.6 (12)	15.4 (88)	38.7 (82)	17.5 (83)	1



## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

FIPS	State	County	Place Name	Tract	Total Population	Total Minority	% Minority	Total Population for Whom Poverty Status is Determined	Individuals Living in Poverty	% Poverty	Identified Environmental Justice Tract (Yes or No)	Traffic Proximity And Volume [Daily vehicles/ meters (Percentile)]	Pollutant Burdens					Chronic Disease Burdens						
													Air Toxics Cancer Risk [Lifetime risk per million (Percentile)]	Air Toxics Respiratory Hazard Index [Ratio of exposure to health-based reference concentration (Percentile)]	Diesel Particulate Matter [µg/m3 (Percentile)]	Particulate Matter 2.5 [µg/m3 (Percentile)]	Number of Pollutant Burdens at/above 90th Percentile	Asthma [% adults (Percentile rank)]	Cancer [% adults (Percentage rank)]	Diabetes [% adults (Percentile rank)]	High Blood Pressures [% adults (Percentile rank)]	Poor Mental Health [% adults (Percentage rank)]	Number of Chronic Disease Burdens above 90th Percentile	
34013018400	New Jersey	Essex	City of Orange Township	184	1,925	1,888	98.08	1,917	779	40.64	Yes	2,400 (93)	30 (83)	0.5 (95)	0.738 (95)	8.91 (58)	2	13.1 (96)	5.5 (26)	18 (94)	43.5 (93)	17.7 (84)	3	
34013018600	New Jersey	Essex	City of Orange Township	186	4,555	4,291	94.2	4,342	2,277	52.44	Yes	5,100 (98)	30 (83)	0.4 (81)	0.657 (94)	8.88 (57)	1	10.9 (77)	4.5 (11)	14.5 (84)	35 (68)	17.3 (82)	0	
34013018700	New Jersey	Essex	City of Orange Township	187	5,228	5,162	98.74	5,221	3,020	57.84	Yes	1,000 (82)	30 (83)	0.4 (81)	0.659 (94)	8.88 (57)	1	11.8 (89)	6 (35)	16 (90)	43.5 (93)	14.8 (59)	2	
34013018800	New Jersey	Essex	City of Orange Township	188	4,464	4,229	94.74	4,290	1,257	29.3	Yes	150 (36)	30 (83)	0.4 (81)	0.646 (94)	8.87 (57)	1	11 (79)	6.1 (37)	13.4 (77)	39 (83)	12.8 (36)	0	
34013018900	New Jersey	Essex	City of Orange Township	189	3,772	3,657	96.95	3,752	1,685	44.91	Yes	270 (50)	30 (83)	0.4 (81)	0.634 (94)	8.85 (56)	1	12 (90)	4.6 (12)	14.5 (84)	38.7 (82)	16.9 (79)	1	
34013019100	New Jersey	Essex	South Orange Village Township	191	4,140	2,205	53.26	4,042	194	4.8	Yes	350 (57)	30 (83)	0.4 (81)	0.637 (94)	8.85 (57)	1	9.3 (37)	6.2 (39)	9.2 (31)	32 (51)	10.1 (9)	0	
34013019200	New Jersey	Essex	South Orange Village Township	192	4,642	1,717	36.99	2,799	861	30.76	Yes	390 (59)	30 (83)	0.4 (81)	0.616 (93)	8.85 (57)	1	10.5 (70)	4.3 (9)	7.7 (14)	25.3 (14)	15.3 (65)	0	
34013019600	New Jersey	Essex	Maplewood Township	196	6,139	4,144	67.5	6,119	1,484	24.25	Yes	170 (39)	30 (83)	0.4 (81)	0.626 (93)	8.86 (57)	1	10.1 (60)	7.3 (64)	11.6 (61)	37.3 (78)	11.4 (21)	0	
34013019700	New Jersey	Essex	Maplewood Township	197	6,586	5,431	82.46	6,542	793	12.12	Yes	400 (60)	30 (83)	0.4 (81)	0.637 (94)	8.84 (56)	1	10.9 (77)	5.3 (22)	11 (54)	34.8 (67)	13.2 (41)	0	
34013022700	New Jersey	Essex	Newark	227	2,648	2,515	94.98	2,648	1,508	56.95	Yes	620 (72)	40 (97)	0.6 (98)	0.915 (97)	9.01 (61)	3	13.7 (97)	5.5 (26)	20.7 (98)	47.6 (97)	19.7 (93)	4	
34013022800	New Jersey	Essex	Newark	228	1,964	1,878	95.62	1,964	1,399	71.23	Yes	550 (69)	40 (97)	0.5 (95)	0.886 (97)	9.02 (61)	3	15 (99)	5.8 (31)	22.2 (99)	49.7 (98)	20.8 (96)	4	
34013022900	New Jersey	Essex	Newark	229	4,255	3,590	84.37	3,195	1,637	51.24	Yes	5,600 (98)	40 (97)	0.5 (95)	0.853 (97)	9.06 (62)	3	11.8 (89)	3.1 (2)	11.1 (55)	29.6 (36)	18.9 (90)	1	
34013023000	New Jersey	Essex	Newark	230	3,179	3,160	99.4	3,037	2,300	75.73	Yes	880 (80)	40 (97)	0.5 (95)	0.853 (97)	9 (61)	3	15 (99)	5.8 (31)	25.4 (100)	50.4 (98)	22.4 (98)	4	
34013023100	New Jersey	Essex	Newark	231	2,396	2,365	98.71	2,388	1,150	48.16	Yes	520 (67)	30 (83)	0.5 (95)	0.835 (96)	8.97 (60)	2	13.4 (97)	3.9 (5)	13.7 (79)	38.8 (83)	18.5 (88)	1	
34013023200	New Jersey	Essex	Newark	232	3,413	3,386	99.21	3,382	2,212	65.41	Yes	560 (69)	40 (97)	0.5 (95)	0.883 (97)	9 (61)	3	14.1 (98)	3.9 (5)	14.9 (85)	39.1 (84)	21.2 (97)	2	
34013980100	New Jersey	Essex	Newark	9801	2,594	2,126	81.96	0	0	0	Yes	6,600 (98)	40 (97)	0.6 (98)	0.972 (97)	9.06 (62)	3	8.8 (23)	2.4 (1)	10.3 (45)	34.2 (63)	16.3 (74)	0	
34013980200	New Jersey	Essex	Newark	9802	1,391	1,223	87.92	0	0	0	Yes	5,400 (98)	40 (97)	0.6 (98)	0.911 (97)	9.05 (62)	3	9.8 (52)	2.3 (1)	10 (41)	33.1 (57)	17.9 (85)	0	
34017000100	New Jersey	Hudson	Jersey City	1	6,029	4,810	79.78	5,950	2,100	35.29	Yes	2,700 (94)	40 (97)	0.6 (98)	1.362 (99)	9.25 (68)	3	8.4 (14)	5 (18)	11.3 (57)	30.2 (40)	12.6 (34)	0	
34017000200	New Jersey	Hudson	Jersey City	2	5,207	4,363	83.79	5,207	2,546	48.9	Yes	1,100 (84)	40 (97)	0.6 (98)	1.375 (99)	9.25 (68)	3	8.8 (23)	5 (18)	11.8 (63)	30.4 (41)	13.5 (44)	0	
34017000300	New Jersey	Hudson	Jersey City	3	4,132	3,150	76.23	4,126	1,591	38.56	Yes	700 (74)	40 (97)	0.6 (98)	1.4 (99)	9.25 (68)	3	9 (28)	4.5 (11)	10 (41)	27.8 (26)	14.5 (56)	0	
34017000400	New Jersey	Hudson	Jersey City	4	3,669	3,044	82.97	3,608	1,209	33.51	Yes	2,700 (95)	40 (97)	0.6 (98)	1.38 (99)	9.23 (68)	3	8.6 (18)	4.8 (15)	11.3 (57)	30.4 (41)	13.1 (40)	0	

**Appendix 17D: Technical Memorandum –**

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

34017000500	New Jersey	Hudson	Jersey City	5	4,016	3,194	79.53	3,966	1,477	37.24	Yes	900 (80)	40 (97)	0.6 (98)	1.373 (99)	9.25 (68)	3	8.5 (16)	4.3 (9)	10.6 (49)	28.6 (30)	13.4 (43)	0
34017000600	New Jersey	Hudson	Jersey City	6	5,272	3,350	63.54	5,272	1,533	29.08	Yes	730 (76)	40 (97)	0.5 (95)	1.418 (99)	9.24 (68)	3	8.6 (18)	4.8 (15)	11.1 (55)	30 (39)	13.1 (40)	0
34017000700	New Jersey	Hudson	Jersey City	7	3,032	2,164	71.37	3,032	895	29.52	Yes	540 (68)	40 (97)	0.5 (95)	1.41 (99)	9.24 (68)	3	8.4 (14)	4.8 (15)	10.4 (46)	28.7 (31)	12.8 (36)	0
34017000800	New Jersey	Hudson	Jersey City	8	3,508	2,177	62.06	3,508	1,009	28.76	Yes	700 (75)	40 (97)	0.5 (95)	1.449 (99)	9.24 (68)	3	8.7 (21)	4.1 (7)	8.9 (27)	26.4 (19)	13.4 (43)	0
34017000902	New Jersey	Hudson	Jersey City	9.02	6,007	4,555	75.83	6,007	1,951	32.48	Yes	7,200 (99)	40 (97)	0.6 (98)	1.453 (99)	9.23 (67)	3	7.8 (5)	5.5 (26)	11.3 (57)	31.7 (49)	11.1 (18)	0
34017001000	New Jersey	Hudson	Jersey City	10	2,060	1,623	78.79	2,060	614	29.81	Yes	2,500 (94)	40 (97)	0.6 (98)	1.447 (99)	9.23 (67)	3	8 (7)	4.7 (14)	9 (28)	26.9 (21)	11.5 (22)	0
34017001100	New Jersey	Hudson	Jersey City	11	4,980	3,465	69.58	4,980	1,333	26.77	Yes	1,300 (87)	30 (83)	0.5 (95)	1.461 (99)	9.23 (67)	2	8.3 (12)	4.4 (10)	9.7 (37)	28.1 (27)	12.4 (32)	0
34017001201	New Jersey	Hudson	Jersey City	12.01	2,147	1,932	89.99	2,147	752	35.03	Yes	4,500 (97)	40 (97)	0.6 (98)	1.463 (99)	9.22 (67)	3	7.3 (2)	3.8 (5)	9.2 (31)	25.1 (13)	10.8 (15)	0
34017001202	New Jersey	Hudson	Jersey City	12.02	1,377	1,207	87.65	1,362	565	41.48	Yes	5,300 (98)	30 (83)	0.5 (95)	1.468 (99)	9.22 (67)	2	9.3 (37)	5.1 (19)	13.5 (77)	34.7 (66)	13.8 (48)	0
34017001300	New Jersey	Hudson	Jersey City	13	2,898	2,169	74.84	2,723	783	28.76	Yes	830 (78)	30 (83)	0.5 (95)	1.488 (99)	9.24 (68)	2	8.6 (18)	5.2 (21)	10.3 (45)	29.6 (36)	13 (39)	0
34017001400	New Jersey	Hudson	Jersey City	14	4,058	3,228	79.55	3,851	1,527	39.65	Yes	4,400 (97)	30 (83)	0.5 (95)	1.473 (99)	9.22 (67)	2	8.6 (18)	4.5 (11)	10.9 (52)	29.8 (37)	13 (39)	0
34017001701	New Jersey	Hudson	Jersey City	17.01	4,533	3,811	84.07	4,533	2,169	47.85	Yes	5,000 (98)	40 (97)	0.6 (98)	1.451 (99)	9.21 (67)	3	8.6 (18)	3.8 (5)	9.9 (40)	28.9 (32)	13.4 (43)	0
34017001800	New Jersey	Hudson	Jersey City	18	3,874	3,129	80.77	3,874	2,238	57.77	Yes	2,000 (92)	30 (83)	0.5 (95)	1.454 (99)	9.22 (67)	2	9.1 (31)	3.9 (5)	12.2 (67)	30.2 (40)	14.7 (58)	0
34017001900	New Jersey	Hudson	Jersey City	19	1,722	1,475	85.66	1,722	607	35.25	Yes	4,000 (97)	30 (83)	0.5 (95)	1.46 (99)	9.22 (67)	2	6.9 (1)	3.9 (5)	10.2 (43)	27.2 (23)	10.7 (14)	0
34017002000	New Jersey	Hudson	Jersey City	20	3,990	3,195	80.08	3,967	1,602	40.38	Yes	2,200 (93)	30 (83)	0.5 (95)	1.46 (99)	9.21 (67)	2	8.1 (9)	4.2 (8)	10.3 (45)	28.3 (29)	12.3 (30)	0
34017002300	New Jersey	Hudson	Jersey City	23	2,461	1,404	57.05	2,461	284	11.54	Yes	900 (80)	30 (83)	0.6 (98)	1.488 (99)	9.22 (67)	2	7.6 (3)	3.5 (3)	5.4 (3)	19.9 (3)	10.5 (12)	0
34017002700	New Jersey	Hudson	Jersey City	27	5,503	4,572	83.08	5,475	2,126	38.83	Yes	560 (69)	40 (97)	0.5 (95)	1.455 (99)	9.2 (66)	3	9.5 (43)	4.1 (7)	12.5 (69)	32.1 (51)	15.3 (65)	0
34017002800	New Jersey	Hudson	Jersey City	28	5,502	3,452	62.74	5,166	2,331	45.12	Yes	1,200 (85)	40 (97)	0.5 (95)	1.463 (99)	9.2 (67)	3	9.3 (37)	4.9 (16)	10.8 (51)	30.8 (43)	13.6 (46)	0
34017002900	New Jersey	Hudson	Jersey City	29	3,744	2,470	65.97	3,432	1,374	40.04	Yes	1,400 (88)	30 (83)	0.5 (95)	1.465 (99)	9.21 (67)	2	8.3 (12)	4 (6)	9.2 (31)	27.4 (24)	12.3 (30)	0
34017003000	New Jersey	Hudson	Jersey City	30	2,631	1,985	75.45	2,604	1,146	44.01	Yes	910 (80)	30 (83)	0.5 (95)	1.472 (99)	9.2 (66)	2	8.9 (26)	4.9 (16)	12.4 (69)	33.7 (61)	13 (39)	0
34017003100	New Jersey	Hudson	Jersey City	31	5,705	4,306	75.48	5,508	1,955	35.49	Yes	750 (76)	30 (83)	0.5 (95)	1.474 (99)	9.21 (67)	2	8.3 (12)	4.7 (14)	11.6 (61)	31.3 (46)	12 (27)	0
34017003500	New Jersey	Hudson	Jersey City	35	2,107	1,203	57.1	2,107	469	22.26	Yes	1,200 (85)	30 (83)	0.5 (95)	1.485 (99)	9.2 (67)	2	8.6 (18)	4.3 (9)	8 (16)	25 (13)	12.3 (30)	0
34017004000	New Jersey	Hudson	Jersey City	40	5,411	4,968	91.81	5,411	1,145	21.16	Yes	510 (67)	30 (83)	0.5 (95)	1.46 (99)	9.19 (66)	2	8 (7)	4.4 (10)	10.2 (43)	30.3 (40)	11.3 (20)	0
34017004101	New Jersey	Hudson	Jersey City	41.01	6,242	5,000	80.1	6,242	1,990	31.88	Yes	1,100 (84)	40 (97)	0.6 (98)	1.466 (99)	9.2 (66)	3	10.1 (60)	4.6 (12)	12.4 (69)	33.3 (58)	14.7 (58)	0
34017004102	New Jersey	Hudson	Jersey City	41.02	3,211	2,812	87.57	3,211	1,367	42.57	Yes	650 (73)	30 (83)	0.5 (95)	1.469 (99)	9.19 (66)	2	11.5 (86)	4.5 (11)	14.8 (85)	39.7 (85)	16.8 (78)	0
34017004200	New Jersey	Hudson	Jersey City	42	5,455	5,027	92.15	5,455	2,592	47.52	Yes	1,200 (86)	40 (97)	0.5 (95)	1.455 (99)	9.19 (66)	3	10.8 (76)	4.5 (11)	13.7 (79)	36.7 (75)	15.5 (67)	0
34017004300	New Jersey	Hudson	Jersey City	43	2,405	1,968	81.83	2,384	783	32.84	Yes	560 (69)	30 (83)	0.5 (95)	1.461 (99)	9.19 (66)	2	11.2 (82)	5.2 (21)	12.2 (67)	38.7 (82)	14.1 (52)	0
34017004400	New Jersey	Hudson	Jersey City	44	2,532	2,475	97.75	2,508	1,650	65.79	Yes	1,000 (82)	30 (83)	0.5 (95)	1.43 (99)	9.19 (66)	2	13.8 (98)	5.8 (31)	20.7 (98)	50.7 (98)	19.4 (92)	4
34017004500	New Jersey	Hudson	Jersey City	45	4,486	4,129	92.04	4,458	2,281	51.17	Yes	600 (71)	30 (83)	0.5 (95)	1.408 (99)	9.18 (66)	2	13.2 (96)	5 (18)	17.8 (94)	43.7 (93)	19.4 (92)	4
34017004600	New Jersey	Hudson	Jersey City	46	2,770	2,519	90.94	2,770	1,588	57.33	Yes	210 (44)	30 (83)	0.5 (95)	1.429 (99)	9.19 (66)	2	11.2 (82)	4.6 (12)	15.3 (87)	37.8 (80)	17.2 (81)	0

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

FIPS	State	County	Place Name	Tract	Total Population	Total Minority	% Minority	Total Population for Whom Poverty Status is Determined	Individuals Living in Poverty	% Poverty	Identified Environmental Justice Tract (Yes or No)	Traffic Proximity And Volume [Daily vehicles/ meters (Percentile)]	Pollutant Burdens					Chronic Disease Burdens						
													Air Toxics Cancer Risk [Lifetime risk per million (Percentile)]	Air Toxics Respiratory Hazard Index [Ratio of exposure to health-based reference concentration (Percentile)]	Diesel Particulate Matter [µg/m3 (Percentile)]	Particulate Matter 2.5 [µg/m3 (Percentile)]	Number of Pollutant Burdens at/above 90th Percentile	Asthma [% adults (Percentile rank)]	Cancer [% adults (Percentage rank)]	Diabetes [% adults (Percentile rank)]	High Blood Pressures [% adults (Percentile rank)]	Poor Mental Health [% adults (Percentage rank)]	Number of Chronic Disease Burdens above 90th Percentile	
34017004700	New Jersey	Hudson	Jersey City	47	2,487	1,708	68.68	2,456	967	39.37	Yes	1,400 (87)	30 (83)	0.5 (95)	1.425 (99)	9.19 (66)	2	10.1 (60)	3.8 (5)	10.4 (46)	30.6 (42)	15.2 (64)	0	
34017004800	New Jersey	Hudson	Jersey City	48	3,868	3,163	81.77	3,868	1,342	34.69	Yes	340 (56)	30 (83)	0.5 (95)	1.404 (99)	9.18 (66)	2	9 (28)	4.4 (10)	11.5 (59)	31.8 (49)	13.1 (40)	0	
34017004900	New Jersey	Hudson	Jersey City	49	3,961	3,670	92.65	3,961	1,202	30.35	Yes	960 (81)	30 (83)	0.5 (95)	1.394 (99)	9.18 (66)	2	10.3 (65)	4.8 (15)	13.8 (79)	37.2 (77)	14.4 (55)	0	
34017005200	New Jersey	Hudson	Jersey City	52	4,570	3,868	84.64	4,360	2,287	52.45	Yes	480 (65)	30 (83)	0.5 (95)	1.357 (99)	9.18 (66)	2	12.2 (92)	5.4 (24)	15 (86)	40.9 (88)	17.4 (82)	1	
34017005300	New Jersey	Hudson	Jersey City	53	3,412	3,274	95.96	3,412	1,365	40.01	Yes	640 (72)	30 (83)	0.5 (95)	1.374 (99)	9.18 (66)	2	11.8 (89)	5 (18)	14 (81)	40.7 (88)	15.7 (69)	0	
34017005400	New Jersey	Hudson	Jersey City	54	7,302	6,515	89.22	7,289	1,741	23.89	Yes	440 (63)	30 (83)	0.5 (95)	1.36 (99)	9.16 (65)	2	8.4 (14)	4.8 (15)	9.7 (37)	30.2 (40)	10.4 (11)	0	
34017005500	New Jersey	Hudson	Jersey City	55	2,941	2,729	92.79	2,898	1,741	60.08	Yes	480 (65)	30 (83)	0.5 (95)	1.36 (99)	9.18 (66)	2	13.1 (96)	5.3 (22)	16.5 (91)	43.9 (93)	17.8 (85)	3	
34017005600	New Jersey	Hudson	Jersey City	56	4,371	4,067	93.05	4,332	1,687	38.94	Yes	460 (64)	30 (83)	0.5 (95)	1.351 (99)	9.17 (65)	2	9.9 (54)	4.5 (11)	12 (65)	33.7 (61)	14 (50)	0	
34017005801	New Jersey	Hudson	Jersey City	58.01	5,437	5,251	96.58	5,424	2,925	53.93	Yes	760 (76)	30 (83)	0.5 (95)	1.371 (99)	9.18 (66)	2	13.2 (96)	5.3 (22)	18.6 (95)	46.1 (96)	18.6 (89)	3	
34017005802	New Jersey	Hudson	Jersey City	58.02	1,642	851	51.83	1,603	142	8.86	Yes	27 (11)	30 (83)	0.5 (95)	1.581 (99)	9.14 (65)	2	7.5 (3)	4.7 (14)	5.7 (3)	22.7 (7)	9.1 (4)	0	
34017005900	New Jersey	Hudson	Jersey City	59	7,590	6,292	82.9	7,386	1,531	20.73	Yes	540 (68)	30 (83)	0.5 (95)	1.351 (99)	9.16 (65)	2	8.7 (21)	5.5 (26)	12.1 (66)	33.8 (61)	12.1 (28)	0	
34017006000	New Jersey	Hudson	Jersey City	60	4,069	4,019	98.77	4,069	2,120	52.1	Yes	530 (68)	30 (83)	0.5 (95)	1.359 (99)	9.16 (65)	2	11.9 (90)	5 (18)	15.5 (88)	40.9 (88)	16.9 (79)	1	
34017006100	New Jersey	Hudson	Jersey City	61	7,249	5,630	77.67	7,232	2,547	35.22	Yes	1,500 (88)	30 (83)	0.5 (95)	1.363 (99)	9.14 (65)	2	10.1 (60)	5.1 (19)	13.8 (79)	35.8 (71)	15.3 (65)	0	
34017006200	New Jersey	Hudson	Jersey City	62	3,852	3,636	94.39	3,797	1,597	42.06	Yes	370 (58)	30 (83)	0.5 (95)	1.352 (99)	9.15 (65)	2	10.8 (76)	5.7 (29)	15.9 (89)	39.5 (85)	15.6 (68)	0	
34017006300	New Jersey	Hudson	Jersey City	63	4,576	4,287	93.68	4,500	2,149	47.76	Yes	1,800 (91)	30 (83)	0.5 (95)	1.367 (99)	9.15 (65)	2	11.3 (84)	5.6 (27)	17.4 (93)	41.9 (90)	17.1 (80)	2	
34017006400	New Jersey	Hudson	Jersey City	64	2,837	1,427	50.3	2,819	391	13.87	Yes	1,100 (84)	30 (83)	0.5 (95)	1.482 (99)	9.2 (67)	2	7.9 (6)	3.8 (5)	5.6 (3)	21.3 (5)	11 (17)	0	
34017006500	New Jersey	Hudson	Jersey City	65	2,102	1,392	66.22	2,102	603	28.69	Yes	2,600 (94)	30 (83)	0.5 (95)	1.484 (99)	9.2 (66)	2	8.9 (26)	4 (6)	7.9 (15)	25.9 (17)	13 (39)	0	
34017006600	New Jersey	Hudson	Jersey City	66	1,377	1,210	87.87	1,377	376	27.31	Yes	1,800 (90)	40 (97)	0.6 (98)	1.478 (99)	9.2 (67)	3	6.5 (0)	4.2 (8)	10.9 (52)	27.1 (22)	9.3 (5)	0	
34017006700	New Jersey	Hudson	Jersey City	67	3,155	2,858	90.59	3,155	1,878	59.52	Yes	1,500 (88)	30 (83)	0.5 (95)	1.472 (99)	9.19 (66)	2	12.9 (95)	4.6 (12)	16.4 (91)	40 (86)	19.4 (92)	3	
34017006800	New Jersey	Hudson	Jersey City	68	3,854	3,679	95.46	3,854	1,698	44.06	Yes	810 (78)	30 (83)	0.5 (95)	1.379 (99)	9.19 (66)	2	13.4 (97)	4.7 (14)	15.7 (89)	43.6 (93)	19.1 (91)	3	
34017006900	New Jersey	Hudson	Jersey City	69	68	26	38.24	68	26	38.24	Yes	5,600 (98)	40 (97)	0.6 (98)	1.451 (99)	9.23 (68)	3	9.6 (46)	3.2 (2)	8.9 (27)	29.4 (35)	15.7 (69)	0	
34017007000	New Jersey	Hudson	Jersey City	70	4,772	3,366	70.54	4,763	967	20.3	Yes	710 (75)	30 (83)	0.5 (95)	1.495 (99)	9.21 (67)	2	7.9 (6)	3.9 (5)	7.2 (10)	22.8 (7)	11.6 (23)	0	
34017007100	New Jersey	Hudson	Jersey City	71	2,883	2,130	73.88	2,751	755	27.44	Yes	2,000 (92)	30 (83)	0.5 (95)	1.468 (99)	9.21 (67)	2	7.9 (6)	5 (18)	9.9 (40)	29.3 (34)	11.4 (21)	0	
34017007200	New Jersey	Hudson	Jersey City	72	2,445	1,360	55.62	2,177	202	9.28	Yes	4,300 (97)	40 (97)	0.5 (95)	1.493 (99)	9.22 (67)	3	7.3 (2)	6.2 (39)	7.2 (10)	26.8 (21)	9.4 (5)	0	
34017007300	New Jersey	Hudson	Jersey City	73	2,940	1,581	53.78	2,940	212	7.21	Yes	630 (72)	30 (83)	0.5 (95)	1.465 (99)	9.19 (66)	2	6.5 (0)	2.4 (1)	2.5 (0)	13.1 (1)	8.5 (2)	0	



**Appendix 17D: Technical Memorandum –**

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

34017007500	New Jersey	Hudson	Jersey City	75	6,264	3,923	62.63	6,264	886	14.14	Yes	870 (79)	30 (83)	0.5 (95)	1.492 (99)	9.2 (67)	2	7 (1)	4 (6)	5.9 (4)	22 (6)	9.4 (5)	0
34017007600	New Jersey	Hudson	Jersey City	76	8,444	5,440	64.42	8,444	617	7.31	Yes	570 (70)	30 (83)	0.5 (95)	1.661 (99)	9.21 (67)	2	5.9 (0)	2.2 (1)	3.1 (1)	13.7 (1)	7.8 (1)	0
34017007700	New Jersey	Hudson	Jersey City	77	9,134	7,298	79.9	9,134	1,792	19.62	Yes	2,500 (94)	40 (97)	0.6 (98)	1.805 (99)	9.22 (67)	3	5.8 (0)	2.2 (1)	3.8 (1)	14.9 (1)	8 (1)	0
34017007800	New Jersey	Hudson	Jersey City	78	2,245	1,358	60.49	2,245	977	43.52	Yes	3,500 (96)	40 (97)	0.6 (98)	1.528 (99)	9.22 (67)	3	8.9 (26)	6.1 (37)	13.1 (74)	36.3 (74)	12.8 (36)	0
34017010100	New Jersey	Hudson	Bayonne	101	7,133	4,528	63.48	7,133	3,001	42.07	Yes	2,200 (93)	30 (83)	0.5 (95)	1.373 (99)	9.13 (64)	2	9.4 (40)	6.2 (39)	11.2 (56)	33.3 (58)	14 (50)	0
34017010300	New Jersey	Hudson	Bayonne	103	3,147	1,989	63.2	3,147	1,685	53.54	Yes	1,600 (89)	30 (83)	0.5 (95)	1.297 (98)	9.1 (63)	2	10.2 (62)	5.9 (33)	11.8 (63)	33.8 (61)	15.7 (69)	0
34017010400	New Jersey	Hudson	Bayonne	104	4,184	2,354	56.26	4,173	998	23.92	Yes	950 (81)	30 (83)	0.5 (95)	1.333 (99)	9.07 (63)	2	9.1 (31)	6.5 (45)	9.4 (33)	31.8 (49)	12.6 (34)	0
34017010500	New Jersey	Hudson	Bayonne	105	5,503	2,917	53.01	5,484	867	15.81	Yes	340 (56)	30 (83)	0.5 (95)	1.277 (98)	9.09 (63)	2	9 (28)	6.8 (52)	9.9 (40)	32.3 (52)	12.4 (32)	0
34017010600	New Jersey	Hudson	Bayonne	106	7,383	4,175	56.55	7,383	2,726	36.92	Yes	270 (50)	30 (83)	0.5 (95)	1.267 (98)	9.05 (62)	2	10.1 (60)	7.4 (66)	13.4 (77)	37.2 (77)	14.9 (61)	0
34017010700	New Jersey	Hudson	Bayonne	107	3,723	2,077	55.79	3,723	1,743	46.82	Yes	700 (75)	30 (83)	0.5 (95)	1.241 (98)	9.05 (62)	2	9.8 (52)	5.9 (33)	11.1 (55)	33.6 (60)	14.8 (59)	0
34017010800	New Jersey	Hudson	Bayonne	108	3,471	2,245	64.68	3,471	915	26.36	Yes	1,300 (87)	30 (83)	0.5 (95)	1.233 (98)	9.02 (61)	2	9.5 (43)	6.2 (39)	10.4 (46)	33.9 (62)	14.1 (52)	0
34017010900	New Jersey	Hudson	Bayonne	109	2,174	1,113	51.2	2,174	985	45.31	Yes	860 (79)	30 (83)	0.5 (95)	1.219 (98)	9.03 (61)	2	9.9 (54)	6.9 (54)	13.1 (74)	38.2 (81)	15.1 (63)	0
34017011000	New Jersey	Hudson	Bayonne	110	2,069	1,445	69.84	2,069	695	33.59	Yes	360 (57)	30 (83)	0.5 (95)	1.221 (98)	9.03 (61)	2	9.4 (40)	5.1 (19)	10.9 (52)	33.1 (57)	14.4 (55)	0
34017011100	New Jersey	Hudson	Bayonne	111	4,487	2,806	62.54	4,475	2,032	45.41	Yes	370 (58)	30 (83)	0.5 (95)	1.238 (98)	9.03 (62)	2	10.1 (60)	5.2 (21)	11.8 (63)	32.6 (54)	16.2 (73)	0
34017011200	New Jersey	Hudson	Bayonne	112	6,269	3,194	50.95	6,247	745	11.93	Yes	850 (79)	30 (83)	0.5 (95)	1.203 (98)	9.01 (61)	2	8.9 (26)	6.8 (52)	8.9 (27)	31.8 (49)	12.2 (29)	0
34017011300	New Jersey	Hudson	Bayonne	113	2,593	1,568	60.47	2,593	1,021	39.38	Yes	1,700 (90)	30 (83)	0.5 (95)	1.184 (98)	9 (61)	2	9.9 (54)	6.1 (37)	11.2 (56)	34.1 (63)	15.3 (65)	0
34017011400	New Jersey	Hudson	Bayonne	114	3,583	1,884	52.58	3,583	798	22.27	Yes	1,200 (86)	30 (83)	0.5 (95)	1.113 (98)	8.97 (60)	2	9.4 (40)	6.8 (52)	9.3 (32)	32 (51)	13.3 (42)	0
34017011600	New Jersey	Hudson	Bayonne	116	3,863	1,699	43.98	3,863	1,723	44.6	Yes	420 (61)	30 (83)	0.5 (95)	1.013 (97)	8.96 (60)	2	10.1 (60)	6.3 (41)	10.9 (52)	34.2 (63)	14.4 (55)	0
34017012300	New Jersey	Hudson	Kearny	123	2,454	1,673	68.17	2,454	748	30.48	Yes	550 (69)	30 (83)	0.5 (95)	0.786 (96)	9.13 (64)	2	9.3 (37)	5.7 (29)	10.3 (45)	30.6 (42)	14.1 (52)	0
34017012500	New Jersey	Hudson	Kearny	125	3,815	1,983	51.98	3,770	714	18.94	Yes	760 (76)	30 (83)	0.5 (95)	0.764 (96)	9.1 (63)	2	9.1 (31)	6.3 (41)	9.2 (31)	30.4 (41)	12.9 (37)	0
34017012600	New Jersey	Hudson	Kearny	126	3,681	2,048	55.64	3,681	1,022	27.76	Yes	17 (8)	30 (83)	0.5 (95)	0.78 (96)	9.12 (64)	2	9.7 (49)	5.9 (33)	10.2 (43)	31.6 (48)	14.7 (58)	0
34017012700	New Jersey	Hudson	Kearny	127	6,350	3,844	60.54	4,777	984	20.6	Yes	970 (81)	30 (83)	0.5 (95)	0.932 (97)	9.16 (65)	2	9.1 (31)	4.6 (12)	9.1 (29)	29.9 (38)	14.5 (56)	0
34017012800	New Jersey	Hudson	Kearny	128	4,805	3,375	70.24	4,805	1,733	36.07	Yes	130 (33)	30 (83)	0.5 (95)	0.908 (97)	9.12 (64)	2	9.8 (52)	5.6 (27)	10.7 (50)	30.9 (44)	15.5 (67)	0
34017012900	New Jersey	Hudson	Kearny	129	3,824	2,719	71.1	3,705	1,333	35.98	Yes	20 (9)	30 (83)	0.5 (95)	0.871 (97)	9.1 (63)	2	9.3 (37)	5.5 (26)	10.1 (42)	30.1 (39)	14.7 (58)	0
34017013000	New Jersey	Hudson	Kearny	130	4,038	3,448	85.39	4,038	1,350	33.43	Yes	15 (7)	40 (97)	0.5 (95)	0.856 (97)	9.1 (63)	3	9.1 (31)	5.1 (19)	10.7 (50)	30.1 (39)	14 (50)	0
34017013100	New Jersey	Hudson	Kearny	131	2,318	1,407	60.7	2,318	900	38.83	Yes	260 (49)	30 (83)	0.5 (95)	0.797 (96)	9.09 (63)	2	9.5 (43)	5.4 (24)	10.3 (45)	31.4 (47)	14.6 (57)	0
34017013200	New Jersey	Hudson	Kearny	132	4,279	2,969	69.39	4,267	1,939	45.44	Yes	24 (11)	40 (97)	0.5 (95)	0.864 (97)	9.09 (63)	3	9.3 (37)	5 (18)	11 (54)	30.6 (42)	14.6 (57)	0
34017013300	New Jersey	Hudson	Kearny	133	3,052	1,937	63.47	2,946	658	22.34	Yes	320 (54)	30 (83)	0.5 (95)	0.854 (97)	9.08 (63)	2	9.2 (34)	5.8 (31)	10.9 (52)	32.4 (53)	14.3 (54)	0
34017013400	New Jersey	Hudson	East Newark Borough	134	2,644	2,116	80.03	2,618	1,029	39.3	Yes	2,000 (92)	30 (83)	0.5 (95)	0.864 (97)	9.07 (62)	2	8.9 (26)	4.3 (9)	10 (41)	27.5 (24)	14.5 (56)	0
34017013500	New Jersey	Hudson	Harrison	135	5,274	3,765	71.39	5,274	2,130	40.39	Yes	150 (35)	40 (97)	0.5 (95)	0.897 (97)	9.09 (63)	3	9 (28)	5.2 (21)	10.4 (46)	30.2 (40)	14.2 (53)	0

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

FIPS	State	County	Place Name	Tract	Total Population	Total Minority	% Minority	Total Population for Whom Poverty Status is Determined	Individuals Living in Poverty	% Poverty	Identified Environmental Justice Tract (Yes or No)	Traffic Proximity And Volume [Daily vehicles/ meters (Percentile)]	Pollutant Burdens					Chronic Disease Burdens						
													Air Toxics Cancer Risk [Lifetime risk per million (Percentile)]	Air Toxics Respiratory Hazard Index [Ratio of exposure to health-based reference concentration (Percentile)]	Diesel Particulate Matter [µg/m3 (Percentile)]	Particulate Matter 2.5 [µg/m3 (Percentile)]	Number of Pollutant Burdens at/above 90th Percentile	Asthma [% adults (Percentile rank)]	Cancer [% adults (Percentage rank)]	Diabetes [% adults (Percentile rank)]	High Blood Pressures [% adults (Percentile rank)]	Poor Mental Health [% adults (Percentage rank)]	Number of Chronic Disease Burdens above 90th Percentile	
34017013600	New Jersey	Hudson	Harrison	136	2,220	1,725	77.7	2,220	1,070	48.2	Yes	1,800 (91)	40 (97)	0.5 (95)	0.886 (97)	9.08 (63)	3	8.3 (12)	4.4 (10)	9.9 (40)	27.2 (23)	13 (39)	0	
34017013700	New Jersey	Hudson	Harrison	137	2,737	2,230	81.48	2,737	1,266	46.26	Yes	5,500 (98)	40 (97)	0.5 (95)	0.869 (97)	9.07 (63)	3	8.6 (18)	4.5 (11)	10.5 (47)	27.7 (25)	14 (50)	0	
34017013800	New Jersey	Hudson	Harrison	138	3,201	2,379	74.32	3,201	626	19.56	Yes	6,800 (99)	40 (97)	0.5 (95)	0.893 (97)	9.07 (63)	3	7.6 (3)	4.7 (14)	8.4 (21)	26 (17)	10.6 (13)	0	
34017013900	New Jersey	Hudson	Harrison	139	3,781	2,455	64.93	3,781	1,168	30.89	Yes	2,300 (93)	30 (83)	0.5 (95)	0.913 (97)	9.1 (63)	2	8.3 (12)	4.9 (16)	8.9 (27)	27.7 (25)	12.4 (32)	0	
34017014000	New Jersey	Hudson	North Bergen Township	140	5,032	4,093	81.34	5,026	1,571	31.26	Yes	1,500 (88)	40 (97)	0.5 (95)	1.19 (98)	9.34 (70)	3	8.7 (21)	5.5 (26)	12.1 (66)	31.6 (48)	13.3 (42)	0	
34017014101	New Jersey	Hudson	North Bergen Township	141.01	4,202	2,530	60.21	3,641	610	16.75	Yes	1,900 (91)	40 (97)	0.5 (95)	1.247 (98)	9.32 (70)	3	7.9 (6)	7.6 (71)	10.4 (46)	33.3 (58)	10.3 (11)	0	
34017014102	New Jersey	Hudson	North Bergen Township	141.02	5,096	3,791	74.39	5,096	622	12.21	Yes	1,000 (82)	40 (97)	0.5 (95)	1.222 (98)	9.33 (70)	3	8 (7)	6.2 (39)	9.8 (38)	30.5 (42)	10.6 (13)	0	
34017014200	New Jersey	Hudson	North Bergen Township	142	5,994	5,382	89.79	5,994	1,848	30.83	Yes	510 (67)	40 (97)	0.5 (95)	1.246 (98)	9.33 (70)	3	8.4 (14)	4.9 (16)	11.2 (56)	30.7 (43)	13 (39)	0	
34017014300	New Jersey	Hudson	North Bergen Township	143	4,980	4,095	82.23	4,980	1,233	24.76	Yes	710 (75)	40 (97)	0.5 (95)	1.231 (98)	9.33 (70)	3	8.1 (9)	5.1 (19)	10.8 (51)	29.9 (38)	12.2 (29)	0	
34017014400	New Jersey	Hudson	North Bergen Township	144	7,752	6,269	80.87	7,745	1,520	19.63	Yes	1,400 (88)	40 (97)	0.5 (95)	1.207 (98)	9.33 (70)	3	8.3 (12)	5.2 (21)	10.9 (52)	30.6 (42)	12.5 (33)	0	
34017014501	New Jersey	Hudson	North Bergen Township	145.01	6,230	5,395	86.6	6,230	2,569	41.24	Yes	1,100 (84)	40 (97)	0.6 (98)	1.254 (98)	9.33 (70)	3	9.1 (31)	5.1 (19)	13.5 (77)	32.8 (55)	14.8 (59)	0	
34017014502	New Jersey	Hudson	North Bergen Township	145.02	3,329	2,667	80.11	3,329	2,359	70.86	Yes	1,300 (86)	40 (97)	0.6 (98)	1.371 (99)	9.33 (70)	3	10.8 (76)	8.2 (83)	23.7 (99)	46.4 (96)	17.2 (81)	2	
34017014600	New Jersey	Hudson	North Bergen Township	146	3,820	2,922	76.49	3,820	1,049	27.46	Yes	1,100 (83)	40 (97)	0.5 (95)	1.243 (98)	9.34 (71)	3	8.5 (16)	4.5 (11)	11.1 (55)	29.4 (35)	13.1 (40)	0	
34017014700	New Jersey	Hudson	North Bergen Township	147	5,749	4,821	83.86	5,749	2,053	35.71	Yes	940 (81)	40 (97)	0.5 (95)	1.263 (98)	9.3 (70)	3	8.6 (18)	4.8 (15)	12 (65)	30.8 (43)	13.5 (44)	0	
34017014800	New Jersey	Hudson	North Bergen Township	148	6,104	4,609	75.51	6,048	1,906	31.51	Yes	4,300 (97)	40 (97)	0.5 (95)	1.326 (98)	9.28 (69)	3	8.3 (12)	5.8 (31)	12.9 (73)	33.4 (59)	12.5 (33)	0	
34017014900	New Jersey	Hudson	North Bergen Township	149	3,331	2,883	86.55	3,327	911	27.38	Yes	3,200 (96)	40 (97)	0.5 (95)	1.35 (99)	9.26 (68)	3	8.1 (9)	4.7 (14)	11.4 (58)	30.2 (40)	12.4 (32)	0	
34017015001	New Jersey	Hudson	Guttenberg	150.01	1,975	1,115	56.46	1,975	235	11.9	Yes	2,000 (92)	40 (97)	0.5 (95)	1.27 (98)	9.32 (70)	3	7.7 (4)	6.5 (45)	8.7 (24)	30.2 (40)	9.1 (4)	0	
34017015002	New Jersey	Hudson	Guttenberg	150.02	6,325	5,067	80.11	6,218	2,359	37.94	Yes	500 (66)	40 (97)	0.5 (95)	1.257 (98)	9.33 (70)	3	9.3 (37)	4.9 (16)	13.7 (79)	32.2 (52)	15.4 (66)	0	
34017015100	New Jersey	Hudson	Guttenberg	151	3,017	2,542	84.26	3,017	887	29.4	Yes	550 (69)	30 (83)	0.5 (95)	1.238 (98)	9.33 (70)	2	9.2 (34)	4.4 (10)	12.3 (68)	29.6 (36)	15.3 (65)	0	

**Appendix 17D: Technical Memorandum –**

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

34017015201	New Jersey	Hudson	West New York	152.01	2,939	1,662	56.55	2,939	278	9.46	Yes	1,500 (89)	40 (97)	0.5 (95)	1.291 (98)	9.31 (70)	3	7.5 (3)	6.2 (39)	7.6 (13)	27.5 (24)	8.9 (3)	0
34017015202	New Jersey	Hudson	West New York	152.02	6,325	5,292	83.67	6,233	2,466	39.56	Yes	1,000 (82)	40 (97)	0.5 (95)	1.27 (98)	9.32 (70)	3	8.3 (12)	4.7 (14)	10.9 (52)	29.6 (36)	12.5 (33)	0
34017015300	New Jersey	Hudson	West New York	153	4,010	3,572	89.08	4,010	1,606	40.05	Yes	360 (58)	40 (97)	0.5 (95)	1.261 (98)	9.32 (70)	3	9 (28)	4.4 (10)	12.7 (71)	30.7 (43)	14.9 (61)	0
34017015500	New Jersey	Hudson	West New York	155	4,946	4,454	90.05	4,928	2,051	41.62	Yes	1,000 (83)	40 (97)	0.5 (95)	1.253 (98)	9.32 (70)	3	8.9 (26)	4.9 (16)	13.5 (77)	32.6 (54)	14.5 (56)	0
34017015600	New Jersey	Hudson	West New York	156	4,572	4,152	90.81	4,521	2,308	51.05	Yes	630 (72)	40 (97)	0.5 (95)	1.264 (98)	9.32 (70)	3	9.7 (49)	4.5 (11)	15.2 (87)	32.3 (52)	16.8 (78)	0
34017015700	New Jersey	Hudson	West New York	157	4,209	4,133	98.19	4,208	2,126	50.52	Yes	550 (69)	40 (97)	0.5 (95)	1.278 (98)	9.31 (70)	3	8.8 (23)	4.3 (9)	12.6 (70)	30.6 (42)	14.5 (56)	0
34017015801	New Jersey	Hudson	West New York	158.01	2,982	1,630	54.66	2,982	556	18.65	Yes	240 (47)	40 (97)	0.5 (95)	1.31 (98)	9.31 (70)	3	6.9 (1)	2.9 (2)	4.6 (2)	17.6 (2)	9.6 (6)	0
34017015802	New Jersey	Hudson	West New York	158.02	6,649	6,149	92.48	6,633	3,528	53.19	Yes	390 (60)	40 (97)	0.5 (95)	1.291 (98)	9.31 (70)	3	8.6 (18)	6.8 (52)	17 (93)	38.8 (83)	12.9 (37)	1
34017015900	New Jersey	Hudson	West New York	159	6,054	5,340	88.21	6,045	3,235	53.52	Yes	310 (53)	40 (97)	0.5 (95)	1.279 (98)	9.31 (70)	3	9.2 (34)	4.1 (7)	13.8 (79)	32.3 (52)	16.3 (74)	0
34017016000	New Jersey	Hudson	West New York	160	3,416	3,022	88.47	3,416	1,351	39.55	Yes	920 (80)	40 (97)	0.5 (95)	1.259 (98)	9.32 (70)	3	8.5 (16)	4.5 (11)	12.2 (67)	30.6 (42)	13.6 (46)	0
34017016100	New Jersey	Hudson	Union City	161	3,960	3,298	83.28	3,960	2,155	54.42	Yes	270 (50)	40 (97)	0.5 (95)	1.317 (98)	9.31 (70)	3	8.9 (26)	4.1 (7)	13.3 (76)	29.9 (38)	15.3 (65)	0
34017016200	New Jersey	Hudson	Union City	162	4,286	3,598	83.95	4,286	2,249	52.47	Yes	1,100 (84)	40 (97)	0.5 (95)	1.297 (98)	9.31 (70)	3	9.4 (40)	4.5 (11)	15.4 (88)	33.4 (59)	16.3 (74)	0
34017016300	New Jersey	Hudson	Union City	163	4,517	3,883	85.96	4,508	1,793	39.77	Yes	420 (61)	40 (97)	0.5 (95)	1.346 (99)	9.3 (70)	3	8.8 (23)	5 (18)	15.1 (86)	34.7 (66)	14.8 (59)	0
34017016400	New Jersey	Hudson	Union City	164	3,566	3,039	85.22	3,566	1,457	40.86	Yes	950 (81)	40 (97)	0.6 (98)	1.379 (99)	9.3 (69)	3	9.1 (31)	4.9 (16)	14.8 (85)	33.1 (57)	14.9 (61)	0
34017016500	New Jersey	Hudson	Union City	165	4,989	4,231	84.81	4,858	1,695	34.89	Yes	8,000 (99)	40 (97)	0.6 (98)	1.423 (99)	9.28 (69)	3	8.9 (26)	4.8 (15)	12.5 (69)	30.8 (43)	14.3 (54)	0
34017016600	New Jersey	Hudson	Union City	166	4,043	3,301	81.65	3,983	2,033	51.04	Yes	2,900 (95)	40 (97)	0.5 (95)	1.344 (99)	9.29 (69)	3	8.8 (23)	4.7 (14)	13.8 (79)	32.3 (52)	14.5 (56)	0
34017016700	New Jersey	Hudson	Union City	167	1,590	1,272	80	1,590	786	49.43	Yes	8,000 (99)	40 (97)	0.6 (98)	1.332 (98)	9.29 (69)	3	8.7 (21)	4.4 (10)	13.3 (76)	31.1 (45)	14.4 (55)	0
34017016800	New Jersey	Hudson	Union City	168	3,687	3,052	82.78	3,662	1,705	46.56	Yes	6,400 (98)	40 (97)	0.5 (95)	1.371 (99)	9.28 (69)	3	9.2 (34)	4.3 (9)	14.3 (82)	32.6 (54)	16 (71)	0
34017016900	New Jersey	Hudson	Union City	169	2,992	2,270	75.87	2,975	1,801	60.54	Yes	1,600 (89)	40 (97)	0.5 (95)	1.38 (99)	9.28 (69)	3	9.5 (43)	5.6 (27)	17.9 (94)	39.2 (84)	16.1 (72)	1
34017017000	New Jersey	Hudson	Union City	170	5,200	4,194	80.65	4,976	2,778	55.83	Yes	2,000 (92)	40 (97)	0.5 (95)	1.338 (99)	9.28 (69)	3	9.2 (34)	4.8 (15)	14.4 (83)	33.2 (58)	15.7 (69)	0
34017017100	New Jersey	Hudson	Union City	171	5,017	4,363	86.96	5,005	2,161	43.18	Yes	1,000 (83)	40 (97)	0.6 (98)	1.347 (99)	9.27 (69)	3	9.1 (31)	4.9 (16)	13 (74)	30.9 (44)	14.7 (58)	0
34017017200	New Jersey	Hudson	Union City	172	3,297	2,719	82.47	3,286	1,500	45.65	Yes	780 (77)	40 (97)	0.6 (98)	1.381 (99)	9.27 (69)	3	9.1 (31)	4.3 (9)	12.5 (69)	29.7 (37)	15.3 (65)	0
34017017300	New Jersey	Hudson	Union City	173	2,520	1,749	69.4	2,520	816	32.38	Yes	820 (78)	40 (97)	0.6 (98)	1.428 (99)	9.27 (69)	3	8.9 (26)	5.4 (24)	12 (65)	32.1 (51)	13.4 (43)	0
34017017400	New Jersey	Hudson	Union City	174	2,489	2,152	86.46	2,489	1,251	50.26	Yes	690 (74)	40 (97)	0.5 (95)	1.382 (99)	9.27 (69)	3	9.6 (46)	4.8 (15)	15.8 (89)	33.5 (59)	16.7 (77)	0
34017017500	New Jersey	Hudson	Union City	175	4,520	4,088	90.44	4,508	2,413	53.53	Yes	720 (75)	40 (97)	0.5 (95)	1.381 (99)	9.27 (69)	3	9.1 (31)	3.9 (5)	13 (74)	31 (45)	15.9 (71)	0
34017017600	New Jersey	Hudson	Union City	176	3,381	2,919	86.34	3,354	1,807	53.88	Yes	980 (82)	40 (97)	0.6 (98)	1.364 (99)	9.27 (69)	3	9.2 (34)	4.6 (12)	13.9 (80)	32.5 (54)	15.5 (67)	0
34017017700	New Jersey	Hudson	Union City	177	1,758	1,386	78.84	1,758	1,007	57.28	Yes	1,700 (90)	40 (97)	0.6 (98)	1.366 (99)	9.26 (68)	3	9.9 (54)	4.3 (9)	14.9 (85)	31.3 (46)	17 (80)	0
34017017800	New Jersey	Hudson	Union City	178	6,414	5,305	82.71	6,414	1,920	29.93	Yes	800 (78)	40 (97)	0.6 (98)	1.399 (99)	9.26 (68)	3	8.9 (26)	4.4 (10)	11.2 (56)	29.5 (36)	14.5 (56)	0
34017018000	New Jersey	Hudson	Weehawken Township	180	3,942	2,377	60.3	3,901	1,289	33.04	Yes	110 (30)	40 (97)	0.5 (95)	1.359 (99)	9.3 (69)	3	8.6 (18)	4.9 (16)	9.7 (37)	27.4 (24)	12.6 (34)	0
34017018100	New Jersey	Hudson	Weehawken Township	181	2,708	1,780	65.73	2,708	764	28.21	Yes	3,600 (96)	40 (97)	0.6 (98)	1.438 (99)	9.3 (69)	3	8.3 (12)	5.8 (31)	9.3 (32)	29.8 (37)	11.6 (23)	0



## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

FIPS	State	County	Place Name	Tract	Total Population	Total Minority	% Minority	Total Population for Whom Poverty Status is Determined	Individuals Living in Poverty	% Poverty	Identified Environmental Justice Tract (Yes or No)	Traffic Proximity And Volume [Daily vehicles/ meters (Percentile)]	Pollutant Burdens					Chronic Disease Burdens						
													Air Toxics Cancer Risk [Lifetime risk per million (Percentile)]	Air Toxics Respiratory Hazard Index [Ratio of exposure to health-based reference concentration (Percentile)]	Diesel Particulate Matter [µg/m3 (Percentile)]	Particulate Matter 2.5 [µg/m3 (Percentile)]	Number of Pollutant Burdens at/above 90th Percentile	Asthma [% adults (Percentile rank)]	Cancer [% adults (Percentage rank)]	Diabetes [% adults (Percentile rank)]	High Blood Pressures [% adults (Percentile rank)]	Poor Mental Health [% adults (Percentage rank)]	Number of Chronic Disease Burdens above 90th Percentile	
34017019000	New Jersey	Hudson	Hoboken	190	4,688	2,770	59.09	4,514	2,355	52.17	Yes	230 (46)	40 (97)	0.6 (98)	1.507 (99)	9.24 (68)	3	10.3 (65)	3.8 (5)	8.5 (22)	24.7 (12)	17.6 (84)	0	
34017019800	New Jersey	Hudson	Secaucus	198	7,109	4,052	57	7,066	785	11.11	Yes	2,100 (92)	30 (83)	0.5 (95)	1.176 (98)	9.33 (70)	2	8.3 (12)	6.6 (47)	8.6 (23)	30 (39)	11.2 (19)	0	
34017020100	New Jersey	Hudson	Secaucus	201	2,583	2,063	79.87	2,583	502	19.43	Yes	42 (15)	40 (97)	0.5 (95)	1.154 (98)	9.22 (67)	3	7.6 (3)	3 (2)	4.9 (2)	18.3 (2)	11.2 (19)	0	
34017032400	New Jersey	Hudson	West New York	324	6,560	5,921	90.26	6,417	3,291	51.29	Yes	420 (61)	40 (97)	0.5 (95)	1.248 (98)	9.33 (70)	3	9.1 (31)	5.2 (21)	14.7 (85)	34.1 (63)	15.1 (63)	0	
34039030200	New Jersey	Union	Elizabeth	302	3,170	3,105	97.95	3,153	1,820	57.72	Yes	4,300 (97)	40 (97)	0.5 (95)	0.9 (97)	8.97 (60)	3	11.5 (86)	3.7 (4)	13.4 (77)	30.9 (44)	19 (91)	1	
34039030400	New Jersey	Union	Elizabeth	304	5,644	5,396	95.61	5,644	3,448	61.09	Yes	3,400 (96)	40 (97)	0.5 (95)	0.89 (97)	8.97 (60)	3	12.3 (92)	4.2 (8)	15.2 (87)	34 (62)	20.2 (94)	2	
34039030500	New Jersey	Union	Elizabeth	305	5,083	4,671	91.89	5,041	2,146	42.57	Yes	6,100 (98)	50 (99)	0.5 (95)	0.878 (97)	8.96 (60)	3	10 (57)	4.1 (7)	11.8 (63)	27.5 (24)	16.2 (73)	0	
34039030600	New Jersey	Union	Elizabeth	306	3,533	3,051	86.36	3,533	1,562	44.21	Yes	2,000 (92)	100 (99)	0.6 (98)	0.809 (96)	8.94 (59)	3	11.1 (81)	5 (18)	13.2 (75)	32.9 (56)	17.3 (82)	0	
34039030701	New Jersey	Union	Elizabeth	307.01	1,874	1,410	75.24	1,850	465	25.14	Yes	2,500 (94)	60 (99)	0.5 (95)	0.759 (96)	8.92 (58)	3	9.2 (34)	5.2 (21)	10.4 (46)	28.4 (29)	13.9 (49)	0	
34039030702	New Jersey	Union	Elizabeth	307.02	7,851	7,186	91.53	7,823	3,788	48.42	Yes	1,700 (90)	50 (99)	0.5 (95)	0.763 (96)	8.93 (59)	3	10.1 (60)	4.9 (16)	13.6 (78)	31.2 (46)	16 (71)	0	
34039030802	New Jersey	Union	Elizabeth	308.02	3,205	2,757	86.02	3,019	1,091	36.14	Yes	2,700 (94)	50 (99)	0.5 (95)	0.799 (96)	8.94 (59)	3	9.6 (46)	5.2 (21)	12.3 (68)	31.1 (45)	14.3 (54)	0	
34039030900	New Jersey	Union	Elizabeth	309	6,193	5,539	89.44	6,165	3,123	50.66	Yes	3,400 (96)	50 (99)	0.5 (95)	0.842 (96)	8.95 (59)	3	9.8 (52)	4.9 (16)	12.9 (73)	29.9 (38)	16.1 (72)	0	
34039031000	New Jersey	Union	Elizabeth	310	3,588	3,500	97.55	3,588	1,890	52.68	Yes	3,700 (96)	50 (99)	0.5 (95)	0.853 (97)	8.96 (60)	3	10.7 (74)	3.9 (5)	14.4 (83)	30.3 (40)	18.7 (89)	0	
34039031100	New Jersey	Union	Elizabeth	311	5,899	5,422	91.91	5,899	3,517	59.62	Yes	1,600 (89)	50 (99)	0.5 (95)	0.827 (96)	8.95 (60)	3	10.4 (67)	4.8 (15)	15.1 (86)	32.3 (52)	17.2 (81)	0	
34039031200	New Jersey	Union	Elizabeth	312	6,418	5,823	90.73	6,195	3,346	54.01	Yes	1,500 (88)	40 (97)	0.5 (95)	0.872 (97)	8.97 (60)	3	11 (79)	4.4 (10)	14.5 (84)	34.4 (64)	16.9 (79)	0	
34039031300	New Jersey	Union	Elizabeth	313	7,031	5,936	84.43	7,031	3,302	46.96	Yes	2,300 (93)	40 (97)	0.5 (95)	0.86 (97)	8.97 (60)	3	10.4 (67)	4.7 (14)	11.9 (64)	30.5 (42)	15.6 (68)	0	
34039031400	New Jersey	Union	Elizabeth	314	5,470	5,242	95.83	5,452	2,750	50.44	Yes	510 (67)	40 (97)	0.5 (95)	0.831 (96)	8.96 (60)	3	12.1 (91)	4.3 (9)	14.4 (83)	35 (68)	18.1 (86)	1	
34039031500	New Jersey	Union	Elizabeth	315	5,465	3,962	72.5	5,465	1,703	31.16	Yes	690 (74)	40 (97)	0.5 (95)	0.844 (97)	8.98 (60)	3	9.8 (52)	5.1 (19)	10.8 (51)	28.2 (28)	14.7 (58)	0	
34039031601	New Jersey	Union	Elizabeth	316.01	3,787	3,481	91.92	3,787	1,990	52.55	Yes	1,200 (85)	40 (97)	0.5 (95)	0.813 (96)	8.96 (60)	3	10.1 (60)	4.7 (14)	13 (74)	32.2 (52)	14.7 (58)	0	
34039031602	New Jersey	Union	Elizabeth	316.02	5,260	4,420	84.03	5,255	2,268	43.16	Yes	510 (67)	40 (97)	0.5 (95)	0.802 (96)	8.97 (60)	3	9.9 (54)	4.9 (16)	11.7 (62)	30.7 (43)	14.8 (59)	0	
34039031700	New Jersey	Union	Elizabeth	317	5,639	5,225	92.66	5,626	2,640	46.93	Yes	990 (82)	40 (97)	0.5 (95)	0.794 (96)	8.94 (59)	3	11.3 (84)	4.8 (15)	13.5 (77)	34.7 (66)	16.4 (75)	0	
34039031801	New Jersey	Union	Elizabeth	318.01	5,255	4,733	90.07	5,255	2,692	51.23	Yes	1,500 (89)	40 (97)	0.5 (95)	0.771 (96)	8.92 (58)	3	9.9 (54)	4.8 (15)	13.8 (79)	32.6 (54)	15.8 (70)	0	
34039031802	New Jersey	Union	Elizabeth	318.02	3,316	3,091	93.21	3,230	1,492	46.19	Yes	1,500 (88)	40 (97)	0.5 (95)	0.789 (96)	8.94 (59)	3	9.9 (54)	4.4 (10)	12 (65)	29.9 (38)	14.8 (59)	0	
34039031903	New Jersey	Union	Elizabeth	319.03	6,629	5,984	90.27	6,405	3,158	49.31	Yes	1,200 (85)	40 (97)	0.5 (95)	0.741 (95)	8.92 (58)	3	10.6 (72)	5.8 (31)	16.4 (91)	36.2 (73)	16.8 (78)	1	
34039031904	New Jersey	Union	Elizabeth	319.04	2,822	2,633	93.3	2,822	1,452	51.45	Yes	2,300 (93)	40 (97)	0.5 (95)	0.749 (96)	8.93 (59)	3	11.1 (81)	6 (35)	19.1 (96)	40.1 (86)	17.2 (81)	1	

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

34039032001	New Jersey	Union	Elizabeth	320.01	7,741	7,019	90.67	7,692	2,785	36.21	Yes	890 (80)	40 (97)	0.5 (95)	0.727 (95)	8.9 (58)	3	9.1 (31)	4.5 (11)	10.5 (47)	27.4 (24)	13.8 (48)	0
34039032002	New Jersey	Union	Elizabeth	320.02	3,849	3,151	81.87	3,638	1,080	29.69	Yes	1,300 (86)	40 (97)	0.5 (95)	0.738 (95)	8.91 (58)	3	9.1 (31)	5.9 (33)	11.8 (63)	31 (45)	13.2 (41)	0
34039032100	New Jersey	Union	Elizabeth	321	6,977	4,330	62.06	6,977	1,189	17.04	Yes	720 (75)	40 (97)	0.5 (95)	0.739 (95)	8.89 (58)	3	8.9 (26)	6.7 (49)	10 (41)	29.9 (38)	11.9 (26)	0
34039032200	New Jersey	Union	Hillside Township	322	5,844	5,737	98.17	5,793	1,331	22.98	Yes	1,100 (84)	30 (83)	0.5 (95)	0.783 (96)	8.95 (59)	2	12.1 (91)	6.1 (37)	15 (86)	42.3 (91)	14 (50)	2
34039032300	New Jersey	Union	Hillside Township	323	2,636	2,382	90.36	2,624	428	16.31	Yes	4,500 (97)	30 (83)	0.5 (95)	0.768 (96)	8.92 (59)	2	11.7 (88)	5.2 (21)	12.5 (69)	36.4 (74)	15.2 (64)	0
34039032400	New Jersey	Union	Hillside Township	324	7,240	5,500	75.97	7,196	1,821	25.31	Yes	2,800 (95)	30 (83)	0.5 (95)	0.764 (96)	8.9 (58)	2	10.4 (67)	5.6 (27)	10.9 (52)	33.1 (57)	13.7 (47)	0
34039032500	New Jersey	Union	Hillside Township	325	6,208	4,105	66.12	6,208	1,239	19.96	Yes	520 (67)	40 (97)	0.5 (95)	0.782 (96)	8.95 (59)	3	10 (57)	6.3 (41)	11.3 (57)	33 (57)	13.4 (43)	0
34039032600	New Jersey	Union	Union Township	326	5,376	4,751	88.37	5,376	968	18.01	Yes	6,300 (98)	30 (83)	0.5 (95)	0.771 (96)	8.86 (57)	2	10.5 (70)	5.1 (19)	9.8 (38)	31.7 (49)	13 (39)	0
34039032700	New Jersey	Union	Union Township	327	8,242	5,623	68.22	8,220	661	8.04	Yes	2,300 (93)	30 (83)	0.4 (81)	0.768 (96)	8.8 (55)	1	9.5 (43)	6.4 (43)	10.2 (43)	32.4 (53)	11.5 (22)	0
34039032800	New Jersey	Union	Union Township	328	4,894	4,485	91.64	4,894	1,278	26.11	Yes	3,400 (96)	30 (83)	0.4 (81)	0.646 (94)	8.78 (55)	1	11.9 (90)	5.8 (31)	14.3 (82)	40 (86)	14.6 (57)	1
34039032901	New Jersey	Union	Union Township	329.01	4,052	2,355	58.12	3,852	423	10.98	Yes	3,500 (96)	30 (83)	0.4 (81)	0.72 (95)	8.74 (54)	1	9.6 (46)	7.1 (59)	11.1 (55)	34 (62)	12.3 (30)	0
34039033000	New Jersey	Union	Union Township	330	4,480	2,464	55	4,480	696	15.54	Yes	1,400 (88)	30 (83)	0.5 (95)	0.758 (96)	8.74 (53)	2	9.4 (40)	6.6 (47)	9.5 (34)	30.5 (42)	12.3 (30)	0
34039033100	New Jersey	Union	Union Township	331	6,081	4,218	69.36	6,073	1,045	17.21	Yes	4,500 (97)	30 (83)	0.5 (95)	0.805 (96)	8.82 (56)	2	9.2 (34)	6.1 (37)	10 (41)	30.2 (40)	12 (27)	0
34039033200	New Jersey	Union	Union Township	332	3,784	2,244	59.3	3,747	425	11.34	Yes	2,100 (92)	30 (83)	0.5 (95)	0.787 (96)	8.86 (57)	2	9.6 (46)	6.5 (45)	10.6 (49)	32.3 (52)	12.4 (32)	0
34039033300	New Jersey	Union	Union Township	333	4,318	2,458	56.92	4,301	272	6.32	Yes	3,100 (95)	30 (83)	0.5 (95)	0.814 (96)	8.82 (56)	2	8.9 (26)	6.3 (41)	8.7 (24)	28.1 (27)	11.3 (20)	0
34039033500	New Jersey	Union	Union Township	335	8,459	4,588	54.24	7,151	1,178	16.47	Yes	420 (61)	40 (97)	0.5 (95)	0.766 (96)	8.88 (57)	3	9.4 (40)	6.7 (49)	8.8 (25)	28.9 (32)	12.2 (29)	0
34039033700	New Jersey	Union	Roselle Park Borough	337	4,663	2,474	53.06	4,656	767	16.47	Yes	740 (76)	30 (83)	0.4 (81)	0.718 (95)	8.84 (56)	1	8.9 (26)	6 (35)	8.7 (24)	27.2 (23)	12 (27)	0
34039033800	New Jersey	Union	Roselle Park Borough	338	5,720	3,004	52.52	5,702	890	15.61	Yes	1,400 (88)	30 (83)	0.4 (81)	0.719 (95)	8.78 (55)	1	8.7 (21)	6.2 (39)	8.9 (27)	28.2 (28)	11.5 (22)	0
34039033900	New Jersey	Union	Roselle Park Borough	339	3,198	1,985	62.07	3,198	948	29.64	Yes	980 (82)	30 (83)	0.4 (81)	0.721 (95)	8.79 (55)	1	9.6 (46)	5.4 (24)	9.6 (36)	28.5 (30)	14.1 (52)	0
34039034000	New Jersey	Union	Roselle Borough	340	6,076	5,158	84.89	6,076	2,420	39.83	Yes	940 (81)	30 (83)	0.4 (81)	0.715 (95)	8.8 (55)	1	11.3 (84)	5.6 (27)	14.2 (82)	36.9 (76)	15.8 (70)	0
34039034100	New Jersey	Union	Roselle Borough	341	3,309	2,787	84.22	3,303	1,183	35.82	Yes	200 (42)	40 (97)	0.4 (81)	0.713 (95)	8.86 (57)	2	11 (79)	6.2 (39)	14.1 (81)	38 (80)	14.4 (55)	0
34039034200	New Jersey	Union	Roselle Borough	342	3,901	3,377	86.57	3,882	1,217	31.35	Yes	260 (49)	30 (83)	0.4 (81)	0.717 (95)	8.78 (55)	1	10.7 (74)	5.3 (22)	12.2 (67)	36.4 (74)	13.6 (46)	0
34039034300	New Jersey	Union	Roselle Borough	343	3,828	3,160	82.55	3,828	406	10.61	Yes	610 (71)	30 (83)	0.4 (81)	0.712 (95)	8.77 (54)	1	10.3 (65)	6 (35)	11 (54)	34.3 (64)	12.7 (35)	0
34039034400	New Jersey	Union	Roselle Borough	344	4,523	4,338	95.91	4,523	1,999	44.2	Yes	420 (62)	40 (97)	0.4 (81)	0.708 (95)	8.82 (56)	2	11.6 (87)	5.8 (31)	15 (86)	40.3 (87)	14.7 (58)	0
34039034500	New Jersey	Union	Linden	345	4,430	3,429	77.4	4,430	1,328	29.98	Yes	810 (78)	40 (97)	0.5 (95)	0.72 (95)	8.87 (57)	3	10.7 (74)	7 (56)	15.3 (87)	38.2 (81)	14.5 (56)	0
34039034600	New Jersey	Union	Linden	346	4,524	4,318	95.45	4,524	1,447	31.99	Yes	470 (65)	40 (97)	0.4 (81)	0.71 (95)	8.83 (56)	2	12.4 (93)	5.5 (26)	14.7 (85)	41 (88)	15.7 (69)	1
34039034700	New Jersey	Union	Linden	347	4,029	3,016	74.86	4,014	780	19.43	Yes	450 (64)	40 (97)	0.4 (81)	0.705 (95)	8.79 (55)	2	10.3 (65)	6 (35)	10.7 (50)	31.7 (49)	14.3 (54)	0
34039034900	New Jersey	Union	Linden	349	6,064	3,387	55.85	6,064	1,499	24.72	Yes	500 (67)	30 (83)	0.4 (81)	0.708 (95)	8.74 (54)	1	9.3 (37)	6.8 (52)	9.2 (31)	29.8 (37)	12.6 (34)	0
34039035000	New Jersey	Union	Linden	350	3,087	1,966	63.69	3,087	507	16.42	Yes	150 (36)	30 (83)	0.4 (81)	0.699 (95)	8.74 (54)	1	9.3 (37)	6.3 (41)	8.9 (27)	28.9 (32)	12.7 (35)	0
34039035100	New Jersey	Union	Linden	351	4,169	3,195	76.64	4,160	1,670	40.14	Yes	240 (47)	40 (97)	0.5 (95)	0.709 (95)	8.82 (56)	3	10.7 (74)	5.5 (26)	11.1 (55)	31.9 (50)	14.6 (57)	0

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

FIPS	State	County	Place Name	Tract	Total Population	Total Minority	% Minority	Total Population for Whom Poverty Status is Determined	Individuals Living in Poverty	% Poverty	Identified Environmental Justice Tract (Yes or No)	Traffic Proximity And Volume [Daily vehicles/ meters (Percentile)]	Pollutant Burdens					Chronic Disease Burdens						
													Air Toxics Cancer Risk [Lifetime risk per million (Percentile)]	Air Toxics Respiratory Hazard Index [Ratio of exposure to health-based reference concentration (Percentile)]	Diesel Particulate Matter [µg/m3 (Percentile)]	Particulate Matter 2.5 [µg/m3 (Percentile)]	Number of Pollutant Burdens at/above 90th Percentile	Asthma [% adults (Percentile rank)]	Cancer [% adults (Percentage rank)]	Diabetes [% adults (Percentile rank)]	High Blood Pressures [% adults (Percentile rank)]	Poor Mental Health [% adults (Percentage rank)]	Number of Chronic Disease Burdens above 90th Percentile	
34039035200	New Jersey	Union	Linden	352	2,581	1,969	76.29	2,581	519	20.11	Yes	2,300 (93)	100 (99)	0.6 (98)	0.752 (96)	8.89 (58)	3	9.8 (52)	5.6 (27)	11.1 (55)	31.5 (48)	14.2 (53)	0	
34039035300	New Jersey	Union	Linden	353	5,729	3,896	68	5,530	1,332	24.09	Yes	1,400 (88)	40 (97)	0.5 (95)	0.706 (95)	8.8 (55)	3	10.4 (67)	6.4 (43)	11.5 (59)	33.8 (61)	14.9 (61)	0	
34039035400	New Jersey	Union	Linden	354	2,808	1,452	51.71	2,736	634	23.17	Yes	1,500 (89)	40 (97)	0.5 (95)	0.713 (95)	8.8 (55)	3	10 (57)	6.4 (43)	10.5 (47)	32.7 (55)	14.1 (52)	0	
34039035500	New Jersey	Union	Rahway	355	7,085	4,605	65	7,085	1,491	21.04	Yes	540 (68)	30 (83)	0.4 (81)	0.698 (95)	8.68 (52)	1	10.3 (65)	6.5 (45)	11.5 (59)	33.3 (58)	14.3 (54)	0	
34039035700	New Jersey	Union	Rahway	357	5,698	3,375	59.23	5,698	850	14.92	Yes	810 (78)	30 (83)	0.4 (81)	0.683 (95)	8.62 (50)	1	9.4 (40)	6.4 (43)	9.3 (32)	29.5 (36)	12.4 (32)	0	
34039035800	New Jersey	Union	Rahway	358	3,861	3,166	82	3,829	1,476	38.55	Yes	870 (79)	30 (83)	0.4 (81)	0.68 (94)	8.63 (50)	1	11.3 (84)	6.3 (41)	14 (81)	38.9 (83)	14.4 (55)	0	
34039035900	New Jersey	Union	Rahway	359	3,950	2,837	71.82	3,950	820	20.76	Yes	360 (57)	30 (83)	0.4 (81)	0.684 (95)	8.64 (51)	1	9.6 (46)	5 (18)	9.8 (38)	29.8 (37)	13 (39)	0	
34039036000	New Jersey	Union	Rahway	360	5,257	4,397	83.64	5,143	851	16.55	Yes	1,100 (84)	30 (83)	0.5 (95)	0.683 (95)	8.68 (52)	2	10.3 (65)	6.3 (41)	11.9 (64)	35.8 (71)	12.3 (30)	0	
34039038000	New Jersey	Union	Summit	380	5,803	3,051	52.58	5,687	1,032	18.15	Yes	1,200 (85)	30 (83)	0.4 (81)	0.482 (86)	8.56 (48)	0	8.7 (21)	6.4 (43)	8.9 (27)	28.5 (30)	11.3 (20)	0	
34039038800	New Jersey	Union	Plainfield	388	4,776	4,505	94.33	4,652	1,952	41.96	Yes	410 (61)	30 (83)	0.4 (81)	0.434 (82)	8.43 (45)	0	11.7 (88)	5.6 (27)	15.5 (88)	41 (88)	15.2 (64)	0	
34039038900	New Jersey	Union	Plainfield	389	5,893	5,527	93.79	5,717	2,573	45.01	Yes	130 (32)	30 (83)	0.4 (81)	0.418 (80)	8.4 (44)	0	12.2 (92)	5.1 (19)	15.5 (88)	38.8 (83)	17.5 (83)	1	
34039039000	New Jersey	Union	Plainfield	390	3,885	3,513	90.42	3,774	1,532	40.59	Yes	430 (62)	30 (83)	0.3 (47)	0.392 (77)	8.4 (44)	0	11.2 (82)	4.6 (12)	14.3 (82)	34.6 (66)	16.9 (79)	0	
34039039100	New Jersey	Union	Plainfield	391	3,163	1,923	60.8	3,163	383	12.11	Yes	140 (34)	30 (83)	0.4 (81)	0.405 (79)	8.44 (45)	0	9.9 (54)	6.7 (49)	11.1 (55)	35.5 (70)	11 (17)	0	
34039039200	New Jersey	Union	Plainfield	392	5,726	5,023	87.72	5,726	2,349	41.02	Yes	210 (44)	30 (83)	0.3 (47)	0.38 (75)	8.4 (44)	0	11.3 (84)	4.6 (12)	13.8 (79)	35.5 (70)	16.4 (75)	0	
34039039300	New Jersey	Union	Plainfield	393	6,378	6,270	98.31	6,301	4,058	64.4	Yes	570 (70)	30 (83)	0.4 (81)	0.417 (80)	8.38 (43)	0	11.5 (86)	3.2 (2)	13.3 (76)	30.9 (44)	20.4 (95)	1	
34039039400	New Jersey	Union	Plainfield	394	4,714	4,621	98.03	4,689	2,192	46.75	Yes	370 (58)	30 (83)	0.4 (81)	0.452 (83)	8.34 (42)	0	10.7 (74)	4 (6)	11.3 (57)	31.5 (48)	15.7 (69)	0	
34039039500	New Jersey	Union	Plainfield	395	5,748	5,592	97.29	5,727	2,500	43.65	Yes	130 (33)	30 (83)	0.4 (81)	0.46 (84)	8.34 (42)	0	11.3 (84)	4.3 (9)	13.2 (75)	33.2 (58)	16.6 (77)	0	
34039039600	New Jersey	Union	Plainfield	396	4,645	4,198	90.38	4,631	2,400	51.82	Yes	110 (30)	30 (83)	0.4 (81)	0.398 (78)	8.37 (43)	0	11.9 (90)	5.7 (29)	16.5 (91)	42.1 (90)	15.8 (70)	3	
34039039700	New Jersey	Union	Plainfield	397	5,434	4,701	86.51	5,186	1,763	34	Yes	63 (20)	30 (83)	0.3 (47)	0.376 (75)	8.39 (44)	0	11.5 (86)	6.8 (52)	15.3 (87)	41.9 (90)	14.2 (53)	1	
34039039800	New Jersey	Union	Elizabeth	398	4,887	4,044	82.75	4,694	2,966	63.19	Yes	1,900 (91)	40 (97)	0.5 (95)	1.2 (98)	9 (61)	3	11.5 (86)	3.9 (5)	12.3 (68)	30.3 (40)	19.1 (91)	1	
34039039900	New Jersey	Union	Elizabeth	399	1,747	1,550	88.72	1,255	885	70.52	Yes	2,000 (92)	40 (97)	0.5 (95)	0.795 (96)	8.94 (59)	3	10 (57)	4.4 (10)	13.3 (76)	34.7 (66)	16.5 (76)	0	
36005000100	New York	Bronx	West Queens	1	6,864	6,261	91.22	0	0	0	Yes	5.9 (4)	40 (97)	0.6 (98)	1.271 (98)	9.03 (62)	3	11.8 (89)	2.2 (1)	10.6 (49)	30 (39)	19.3 (92)	1	
36005000200	New York	Bronx	Pelham - Throgs Neck	2	4,532	4,499	99.27	4,532	1,903	41.99	Yes	9 (5)	40 (97)	0.6 (98)	1.147 (98)	8.94 (59)	3	10.7 (74)	5.1 (19)	14 (81)	32 (51)	13.1 (40)	0	
36005000400	New York	Bronx	Pelham - Throgs Neck	4	5,516	5,129	92.98	5,503	1,168	21.22	Yes	59 (20)	40 (97)	0.6 (98)	1.122 (98)	8.9 (58)	3	10.1 (60)	4.7 (14)	11.5 (59)	29.2 (34)	11.7 (24)	0	
36005001600	New York	Bronx	Pelham - Throgs Neck	16	5,825	5,612	96.34	5,603	3,300	58.9	Yes	180 (39)	40 (97)	0.6 (98)	1.089 (98)	8.95 (59)	3	11.9 (90)	5.8 (31)	16.8 (92)	38.4 (82)	14.6 (57)	2	



## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

36005001900	New York	Bronx	Hunts Point - Mott Haven	19	3,141	2,801	89.18	2,983	1,560	52.3	Yes	7,600 (99)	40 (97)	0.7 (99)	1.442 (99)	9.16 (65)	3	11 (79)	3.6 (3)	12.2 (67)	28.6 (30)	15.4 (66)	0
36005002000	New York	Bronx	Pelham - Throgs Neck	20	9,040	9,019	99.77	8,984	5,951	66.24	Yes	49 (17)	40 (97)	0.6 (98)	1.207 (98)	8.98 (60)	3	13.7 (97)	5 (18)	18.5 (95)	39.1 (84)	18 (86)	2
36005002300	New York	Bronx	Hunts Point - Mott Haven	23	4,302	4,301	99.98	4,301	3,013	70.05	Yes	7,400 (99)	40 (97)	0.7 (99)	1.567 (99)	9.2 (66)	3	14.3 (98)	5.4 (24)	21.9 (98)	41 (88)	20 (94)	3
36005002400	New York	Bronx	Pelham - Throgs Neck	24	155	90	58.06	155	0	0	Yes	11 (6)	30 (83)	0.5 (95)	1.241 (98)	8.99 (61)	2						
36005002500	New York	Bronx	Hunts Point - Mott Haven	25	5,610	5,390	96.08	5,577	3,445	61.77	Yes	6,400 (98)	40 (97)	0.6 (98)	1.521 (99)	9.18 (66)	3	12.4 (93)	4.3 (9)	16.7 (92)	33.1 (57)	17.9 (85)	2
36005002701	New York	Bronx	Hunts Point - Mott Haven	27.01	2,608	2,608	100	2,608	2,047	78.49	Yes	8,900 (99)	40 (97)	0.6 (98)	1.426 (99)	9.16 (65)	3	13.9 (98)	4.6 (12)	19 (96)	37.3 (78)	19.9 (94)	3
36005002702	New York	Bronx	Hunts Point - Mott Haven	27.02	4,560	4,524	99.21	4,423	3,225	72.91	Yes	4,100 (97)	40 (97)	0.6 (98)	1.399 (99)	9.16 (65)	3	13.4 (97)	4 (6)	17.4 (93)	33.1 (57)	20.1 (94)	3
36005002800	New York	Bronx	Pelham - Throgs Neck	28	5,151	5,100	99.01	5,121	1,409	27.51	Yes	2,700 (94)	40 (97)	0.6 (98)	1.251 (98)	9.03 (62)	3	12.4 (93)	6.4 (43)	14.3 (82)	39.7 (85)	12 (27)	1
36005003100	New York	Bronx	Hunts Point - Mott Haven	31	1,689	1,665	98.58	1,689	743	43.99	Yes	1,400 (87)	40 (97)	0.6 (98)	1.328 (98)	9.12 (64)	3	11.5 (86)	4.1 (7)	12.8 (72)	30 (39)	14.9 (61)	0
36005003300	New York	Bronx	Hunts Point - Mott Haven	33	3,277	3,185	97.19	3,246	2,392	73.69	Yes	850 (79)	40 (97)	0.6 (98)	1.37 (99)	9.15 (65)	3	13.8 (98)	4.3 (9)	18.7 (96)	35.5 (70)	20 (94)	3
36005003500	New York	Bronx	Hunts Point - Mott Haven	35	3,907	3,890	99.56	3,887	2,417	62.18	Yes	670 (74)	40 (97)	0.6 (98)	1.331 (98)	9.13 (65)	3	12.4 (93)	4.3 (9)	15.7 (89)	32 (51)	17.3 (82)	1
36005003700	New York	Bronx	Hunts Point - Mott Haven	37	250	229	91.6	250	123	49.2	Yes	300 (52)	40 (97)	0.6 (98)	1.383 (99)	9.15 (65)	3	12.8 (95)	4.6 (12)	19 (96)	37.3 (78)	17.7 (84)	2
36005003800	New York	Bronx	Pelham - Throgs Neck	38	1,350	1,350	100	1,328	572	43.07	Yes	79 (23)	40 (97)	0.6 (98)	1.171 (98)	8.97 (60)	3	11.9 (90)	4.7 (14)	14.2 (82)	33.2 (58)	15 (62)	1
36005003900	New York	Bronx	Hunts Point - Mott Haven	39	6,260	5,740	91.69	6,152	4,014	65.25	Yes	2,800 (95)	40 (97)	0.6 (98)	1.534 (99)	9.18 (66)	3	12.1 (91)	4.4 (10)	16.8 (92)	32.3 (52)	18.3 (88)	2
36005004001	New York	Bronx	Pelham - Throgs Neck	40.01	1,475	1,347	91.32	1,475	457	30.98	Yes	2,500 (94)	40 (97)	0.5 (95)	1.004 (97)	8.96 (60)	3	10.7 (74)	6 (35)	16.6 (91)	35.3 (69)	13.2 (41)	1
36005004100	New York	Bronx	Hunts Point - Mott Haven	41	5,942	5,840	98.28	5,907	4,155	70.34	Yes	720 (75)	40 (97)	0.6 (98)	1.515 (99)	9.17 (66)	3	13.6 (97)	4.7 (14)	20.7 (98)	37.4 (78)	20.1 (94)	3
36005004200	New York	Bronx	Pelham - Throgs Neck	42	7,697	7,288	94.69	7,660	3,438	44.88	Yes	3,500 (96)	40 (97)	0.5 (95)	1.067 (97)	8.97 (60)	3	13 (95)	5.7 (29)	18.2 (95)	40.1 (86)	15.9 (71)	2
36005004300	New York	Bronx	Hunts Point - Mott Haven	43	5,552	5,488	98.85	5,534	3,891	70.31	Yes	910 (80)	40 (97)	0.6 (98)	1.481 (99)	9.17 (65)	3	13 (95)	4.5 (11)	18.3 (95)	35.7 (71)	18.8 (90)	3
36005004400	New York	Bronx	Pelham - Throgs Neck	44	4,401	4,107	93.32	4,209	3,128	74.32	Yes	4,900 (98)	40 (97)	0.6 (98)	1.075 (98)	8.99 (61)	3	14.5 (99)	5.8 (31)	21.9 (98)	41.5 (89)	19.6 (93)	3
36005004600	New York	Bronx	Pelham - Throgs Neck	46	1,961	1,866	95.16	1,946	1,272	65.36	Yes	5,100 (98)	40 (97)	0.6 (98)	1.154 (98)	9 (61)	3	12.8 (95)	5.8 (31)	18.7 (96)	37.2 (77)	16 (71)	2
36005004800	New York	Bronx	Pelham - Throgs Neck	48	4,563	4,535	99.39	4,534	2,391	52.73	Yes	3,100 (95)	40 (97)	0.6 (98)	1.122 (98)	9.02 (61)	3	12.1 (91)	4.2 (8)	15.2 (87)	31 (45)	17.6 (84)	1
36005005001	New York	Bronx	Pelham - Throgs Neck	50.01	4,604	4,562	99.09	4,431	2,832	63.91	Yes	4,300 (97)	40 (97)	0.6 (98)	1.132 (98)	9.03 (62)	3	13.3 (96)	4.3 (9)	17.3 (93)	34 (62)	19 (91)	3
36005005002	New York	Bronx	Pelham - Throgs Neck	50.02	5,592	5,532	98.93	5,552	3,824	68.88	Yes	2,000 (92)	40 (97)	0.6 (98)	1.124 (98)	9.04 (62)	3	12.4 (93)	3.9 (5)	16.4 (91)	32 (51)	18.7 (89)	2
36005005100	New York	Bronx	High Bridge - Morrisania	51	5,737	5,737	100	5,728	3,957	69.08	Yes	960 (81)	40 (97)	0.7 (99)	1.576 (99)	9.2 (67)	3	14.6 (99)	5.1 (19)	20.1 (97)	37.7 (79)	20.4 (95)	3
36005005200	New York	Bronx	Pelham - Throgs Neck	52	1,956	1,956	100	1,956	1,292	66.05	Yes	2,600 (94)	40 (97)	0.6 (98)	1.14 (98)	9.05 (62)	3	12.4 (93)	4.8 (15)	16.5 (91)	36.4 (74)	16.4 (75)	2
36005005300	New York	Bronx	Crotona - Tremont	53	4,888	4,832	98.85	4,867	4,036	82.93	Yes	4,000 (97)	40 (97)	0.6 (98)	1.278 (98)	9.22 (67)	3	15.6 (99)	4.3 (9)	18.6 (95)	38.5 (82)	21.6 (97)	3
36005005400	New York	Bronx	Pelham - Throgs Neck	54	5,324	5,246	98.53	5,324	3,094	58.11	Yes	930 (81)	40 (97)	0.6 (98)	1.131 (98)	9.05 (62)	3	12.8 (95)	4.2 (8)	15.7 (89)	33.7 (61)	18.5 (88)	1
36005005600	New York	Bronx	Pelham - Throgs Neck	56	2,279	2,224	97.59	2,279	1,263	55.42	Yes	2,100 (92)	40 (97)	0.6 (98)	1.123 (98)	9.05 (62)	3	12.2 (92)	5.2 (21)	18 (94)	37.1 (77)	16.7 (77)	2
36005005902	New York	Bronx	High Bridge - Morrisania	59.02	2,751	2,618	95.17	2,751	1,684	61.21	Yes	1,300 (86)	40 (97)	0.7 (99)	1.565 (99)	9.2 (66)	3	12.1 (91)	5.5 (26)	18.2 (95)	38.2 (81)	15 (62)	2
36005006000	New York	Bronx	Crotona - Tremont	60	1,386	1,377	99.35	1,386	845	60.97	Yes	5,600 (98)	40 (97)	0.6 (98)	1.124 (98)	9.05 (62)	3	11.1 (81)	4.5 (11)	15.7 (89)	31.4 (47)	15.1 (63)	0

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

FIPS	State	County	Place Name	Tract	Total Population	Total Minority	% Minority	Total Population for Whom Poverty Status is Determined	Individuals Living in Poverty	% Poverty	Identified Environmental Justice Tract (Yes or No)	Traffic Proximity And Volume [Daily vehicles/meters (Percentile)]	Pollutant Burdens					Chronic Disease Burdens					
													Air Toxics Cancer Risk [Lifetime risk per million (Percentile)]	Air Toxics Respiratory Hazard Index [Ratio of exposure to health-based reference concentration (Percentile)]	Diesel Particulate Matter [µg/m3 (Percentile)]	Particulate Matter 2.5 [µg/m3 (Percentile)]	Number of Pollutant Burdens at/above 90th Percentile	Asthma [% adults (Percentile rank)]	Cancer [% adults (Percentage rank)]	Diabetes [% adults (Percentile rank)]	High Blood Pressures [% adults (Percentile rank)]	Poor Mental Health [% adults (Percentage rank)]	Number of Chronic Disease Burdens above 90th Percentile
36005006100	New York	Bronx	High Bridge - Morrisania	61	3,720	3,607	96.96	3,720	1,060	28.49	Yes	1,000 (82)	40 (97)	0.7 (99)	1.56 (99)	9.19 (66)	3	12.2 (92)	8.8 (91)	17.9 (94)	48.2 (97)	10.6 (13)	4
36005006200	New York	Bronx	Pelham - Throgs Neck	62	7,233	7,116	98.38	7,233	5,581	77.16	Yes	4,600 (97)	40 (97)	0.6 (98)	1.116 (98)	9.04 (62)	3	13.8 (98)	5.1 (19)	19.3 (96)	37.9 (80)	18.7 (89)	2
36005006300	New York	Bronx	High Bridge - Morrisania	63	4,582	4,120	89.92	4,571	2,227	48.72	Yes	2,500 (94)	40 (97)	0.6 (98)	1.573 (99)	9.22 (67)	3	11.4 (85)	4.7 (14)	14.5 (84)	32.5 (54)	14.4 (55)	0
36005006400	New York	Bronx	Pelham - Throgs Neck	64	3,932	3,738	95.07	3,855	2,011	52.17	Yes	3,700 (96)	40 (97)	0.6 (98)	1.109 (98)	9.03 (62)	3	12.5 (93)	5.4 (24)	17.1 (93)	36.6 (75)	16.2 (73)	2
36005006500	New York	Bronx	High Bridge - Morrisania	65	5,377	5,079	94.46	5,328	3,666	68.81	Yes	810 (78)	40 (97)	0.7 (99)	1.563 (99)	9.19 (66)	3	12.5 (93)	4.3 (9)	16.1 (90)	33.6 (60)	17.3 (82)	2
36005006700	New York	Bronx	Hunts Point - Mott Haven	67	6,705	6,687	99.73	6,705	4,259	63.52	Yes	890 (80)	40 (97)	0.7 (99)	1.538 (99)	9.18 (66)	3	13.3 (96)	4.5 (11)	17.7 (94)	36.3 (74)	19.2 (91)	3
36005006800	New York	Bronx	Pelham - Throgs Neck	68	3,230	3,230	100	3,230	1,601	49.57	Yes	2,500 (94)	40 (97)	0.6 (98)	1.107 (98)	9.02 (61)	3	11.8 (89)	4.9 (16)	15.2 (87)	33.7 (61)	14.8 (59)	0
36005006900	New York	Bronx	High Bridge - Morrisania	69	7,801	7,488	95.99	7,747	4,442	57.34	Yes	950 (81)	40 (97)	0.7 (99)	1.51 (99)	9.17 (65)	3	12.5 (93)	4.4 (10)	14.9 (85)	32.8 (55)	16.5 (76)	1
36005007000	New York	Bronx	Pelham - Throgs Neck	70	4,378	4,227	96.55	4,362	2,471	56.65	Yes	1,800 (91)	40 (97)	0.6 (98)	1.084 (98)	8.99 (61)	3	11.7 (88)	4.4 (10)	14.7 (85)	32.3 (52)	15.8 (70)	0
36005007100	New York	Bronx	High Bridge - Morrisania	71	2,795	2,743	98.14	2,732	1,266	46.34	Yes	890 (80)	40 (97)	0.6 (98)	1.421 (99)	9.15 (65)	3	11.3 (84)	4.9 (16)	14 (81)	32.6 (54)	13.4 (43)	0
36005007200	New York	Bronx	Pelham - Throgs Neck	72	6,255	5,882	94.04	6,211	3,250	52.33	Yes	2,900 (95)	40 (97)	0.5 (95)	1.036 (97)	8.97 (60)	3	10.6 (72)	4.4 (10)	15.5 (88)	31.4 (47)	14.6 (57)	0
36005007300	New York	Bronx	Hunts Point - Mott Haven	73	4,297	4,225	98.32	4,276	3,167	74.06	Yes	500 (66)	40 (97)	0.6 (98)	1.348 (99)	9.13 (64)	3	13.6 (97)	4.5 (11)	19.6 (97)	36.3 (74)	20.3 (95)	3
36005007400	New York	Bronx	Pelham - Throgs Neck	74	3,634	3,555	97.83	3,634	1,514	41.66	Yes	45 (16)	40 (97)	0.5 (95)	1.015 (97)	8.92 (58)	3	11.9 (90)	5.9 (33)	16.8 (92)	38 (80)	13.7 (47)	2
36005007500	New York	Bronx	High Bridge - Morrisania	75	6,692	6,631	99.09	6,681	3,919	58.66	Yes	520 (68)	40 (97)	0.6 (98)	1.358 (99)	9.13 (65)	3	12.5 (93)	5 (18)	16.8 (92)	35.7 (71)	16.4 (75)	2
36005007600	New York	Bronx	Pelham - Throgs Neck	76	5,311	5,103	96.08	5,266	3,046	57.84	Yes	2,600 (94)	40 (97)	0.6 (98)	1.097 (98)	9.01 (61)	3	12.4 (93)	4.5 (11)	16.9 (92)	33.7 (61)	17.8 (85)	2
36005007700	New York	Bronx	High Bridge - Morrisania	77	2,022	1,960	96.93	2,011	1,260	62.66	Yes	600 (71)	40 (97)	0.6 (98)	1.317 (98)	9.12 (64)	3	12.1 (91)	4.1 (7)	15.6 (88)	32.3 (52)	16.9 (79)	1
36005007800	New York	Bronx	Pelham - Throgs Neck	78	7,415	7,195	97.03	7,390	3,800	51.42	Yes	5,200 (98)	40 (97)	0.5 (95)	0.96 (97)	8.94 (59)	3	11.4 (85)	4.5 (11)	15.1 (86)	32.1 (51)	15.5 (67)	0
36005007900	New York	Bronx	Hunts Point - Mott Haven	79	7,188	7,178	99.86	7,163	5,056	70.59	Yes	480 (65)	40 (97)	0.6 (98)	1.321 (98)	9.12 (64)	3	13 (95)	4.7 (14)	18.3 (95)	35.8 (71)	18.6 (89)	2
36005008300	New York	Bronx	Hunts Point - Mott Haven	83	6,713	6,578	97.99	6,706	4,202	62.66	Yes	1,700 (90)	40 (97)	0.6 (98)	1.317 (98)	9.11 (64)	3	12.2 (92)	4.1 (7)	16.2 (90)	32.2 (52)	17.5 (83)	2
36005008400	New York	Bronx	Pelham - Throgs Neck	84	2,899	2,834	97.76	2,878	708	24.6	Yes	79 (24)	40 (97)	0.6 (98)	1.086 (98)	8.89 (58)	3	10.2 (62)	5 (18)	11.4 (58)	29.8 (37)	11.3 (20)	0
36005008500	New York	Bronx	Hunts Point - Mott Haven	85	5,631	5,565	98.83	5,349	3,176	59.38	Yes	1,500 (88)	40 (97)	0.6 (98)	1.314 (98)	9.1 (63)	3	12 (90)	4.4 (10)	15.7 (89)	31.9 (50)	16.6 (77)	1
36005008600	New York	Bronx	Pelham - Throgs Neck	86	3,936	3,871	98.35	3,833	2,603	67.91	Yes	35 (14)	40 (97)	0.5 (95)	1.001 (97)	8.91 (58)	3	13.1 (96)	5.5 (26)	18.4 (95)	37.4 (78)	17.2 (81)	2
36005008700	New York	Bronx	Hunts Point - Mott Haven	87	6,127	6,011	98.11	5,968	4,434	74.3	Yes	1,800 (91)	40 (97)	0.6 (98)	1.31 (98)	9.09 (63)	3	12.3 (92)	4.7 (14)	17.6 (94)	34.1 (63)	17.5 (83)	2
36005008900	New York	Bronx	Hunts Point - Mott Haven	89	3,218	3,170	98.51	3,215	1,981	61.62	Yes	4,500 (97)	40 (97)	0.6 (98)	1.304 (98)	9.08 (63)	3	11.9 (90)	5.1 (19)	19.2 (96)	35.3 (69)	17.1 (80)	2
36005009000	New York	Bronx	Pelham - Throgs Neck	90	3,459	3,404	98.41	3,434	2,289	66.66	Yes	300 (52)	40 (97)	0.5 (95)	0.936 (97)	8.88 (57)	3	12.7 (94)	4.9 (16)	17.1 (93)	34.6 (66)	16.7 (77)	2

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

36005009200	New York	Bronx	Pelham - Throgs Neck	92	5,848	5,590	95.59	5,820	2,653	45.58	Yes	4,100 (97)	40 (97)	0.5 (95)	0.961 (97)	8.94 (59)	3	10.4 (67)	4.5 (11)	13.5 (77)	29.8 (37)	13.8 (48)	0
36005009300	New York	Bronx	Hunts Point - Mott Haven	93	6,154	6,015	97.74	5,461	3,652	66.87	Yes	1,300 (86)	40 (97)	0.6 (98)	1.283 (98)	9.06 (62)	3	12.3 (92)	3.6 (3)	14.9 (85)	31.9 (50)	18.5 (88)	1
36005009600	New York	Bronx	Pelham - Throgs Neck	96	2,792	2,613	93.59	2,590	1,205	46.53	Yes	2,500 (94)	40 (97)	0.5 (95)	0.93 (97)	8.91 (58)	3	11.1 (81)	6.1 (37)	15.9 (89)	34 (62)	14.1 (52)	0
36005009800	New York	Bronx	Pelham - Throgs Neck	98	4,756	4,589	96.49	4,687	1,205	25.71	Yes	3,500 (96)	40 (97)	0.5 (95)	0.943 (97)	8.92 (58)	3	10.3 (65)	5.3 (22)	12.3 (68)	32.1 (51)	11.6 (23)	0
36005011502	New York	Bronx	Hunts Point - Mott Haven	115.02	4,582	4,549	99.28	4,394	3,005	68.39	Yes	4,300 (97)	40 (97)	0.6 (98)	1.289 (98)	9.05 (62)	3	12.1 (91)	4 (6)	14.9 (85)	32.3 (52)	17.1 (80)	1
36005011700	New York	Bronx	Hunts Point - Mott Haven	117	1,443	1,427	98.89	1,443	1,059	73.39	Yes	960 (81)	40 (97)	0.6 (98)	1.283 (98)	9.01 (61)	3	13.3 (96)	4.5 (11)	18.5 (95)	35.8 (71)	18.7 (89)	2
36005011900	New York	Bronx	Hunts Point - Mott Haven	119	5,440	5,241	96.34	5,437	3,705	68.14	Yes	5,400 (98)	40 (97)	0.6 (98)	1.283 (98)	9.07 (63)	3	12.9 (95)	4.6 (12)	17.5 (94)	35.8 (71)	18.2 (87)	2
36005012101	New York	Bronx	Hunts Point - Mott Haven	121.01	3,070	2,994	97.52	2,983	1,516	50.82	Yes	1,500 (88)	40 (97)	0.6 (98)	1.147 (98)	9.08 (63)	3	12.1 (91)	4.1 (7)	14.8 (85)	34.3 (64)	16.7 (77)	1
36005012102	New York	Bronx	Hunts Point - Mott Haven	121.02	1,447	1,442	99.65	1,447	1,059	73.19	Yes	3,700 (96)	40 (97)	0.6 (98)	1.176 (98)	9.07 (63)	3	13.5 (97)	4.3 (9)	18.3 (95)	34.5 (65)	20 (94)	3
36005012300	New York	Bronx	Hunts Point - Mott Haven	123	4,268	4,217	98.81	4,237	2,237	52.8	Yes	1,100 (83)	40 (97)	0.6 (98)	1.141 (98)	9.07 (63)	3	11.9 (90)	4.4 (10)	13.9 (80)	31.5 (48)	15.8 (70)	1
36005012500	New York	Bronx	Hunts Point - Mott Haven	125	3,860	3,807	98.63	3,858	2,058	53.34	Yes	410 (61)	40 (97)	0.6 (98)	1.16 (98)	9.1 (63)	3	12.5 (93)	4 (6)	15.5 (88)	32.9 (56)	17.2 (81)	1
36005012701	New York	Bronx	Hunts Point - Mott Haven	127.01	1,928	1,892	98.13	1,918	1,233	64.29	Yes	1,300 (86)	40 (97)	0.6 (98)	1.262 (98)	9.08 (63)	3	11.9 (90)	4.8 (15)	18.3 (95)	36 (72)	16.2 (73)	2
36005012901	New York	Bronx	Hunts Point - Mott Haven	129.01	4,419	4,300	97.31	4,406	2,973	67.48	Yes	1,100 (84)	40 (97)	0.6 (98)	1.311 (98)	9.1 (63)	3	12.6 (94)	4.6 (12)	16.9 (92)	35.6 (70)	17.5 (83)	2
36005013000	New York	Bronx	Pelham - Throgs Neck	130	1,476	818	55.42	1,476	163	11.04	Yes	4,200 (97)	30 (83)	0.5 (95)	0.81 (96)	8.75 (54)	2	9.7 (49)	7.1 (59)	11 (54)	30.9 (44)	10.9 (16)	0
36005013100	New York	Bronx	Hunts Point - Mott Haven	131	5,084	4,980	97.95	5,080	2,863	56.36	Yes	500 (66)	40 (97)	0.6 (98)	1.301 (98)	9.1 (63)	3	12.4 (93)	4.2 (8)	14.5 (84)	31.6 (48)	16.7 (77)	1
36005013200	New York	Bronx	Pelham - Throgs Neck	132	7,272	5,229	71.91	7,257	779	10.73	Yes	320 (54)	30 (83)	0.5 (95)	0.859 (97)	8.77 (54)	2	9.3 (37)	6.2 (39)	9.4 (33)	27.6 (25)	10.1 (9)	0
36005013300	New York	Bronx	High Bridge - Morrisania	133	6,000	5,949	99.15	5,966	3,057	51.24	Yes	910 (80)	40 (97)	0.6 (98)	1.319 (98)	9.12 (64)	3	13.4 (97)	5.3 (22)	17.7 (94)	37.4 (78)	17 (80)	2
36005013500	New York	Bronx	High Bridge - Morrisania	135	3,590	3,590	100	3,590	2,165	60.31	Yes	480 (65)	40 (97)	0.6 (98)	1.268 (98)	9.12 (64)	3	13.4 (97)	4.9 (16)	16.7 (92)	36.1 (73)	17 (80)	2
36005014100	New York	Bronx	High Bridge - Morrisania	141	5,851	5,746	98.21	5,835	3,590	61.53	Yes	1,300 (86)	40 (97)	0.6 (98)	1.465 (99)	9.16 (65)	3	12.7 (94)	4.3 (9)	14.8 (85)	32.5 (54)	16.9 (79)	1
36005014300	New York	Bronx	High Bridge - Morrisania	143	1,482	1,469	99.12	1,464	1,207	82.45	Yes	750 (76)	40 (97)	0.6 (98)	1.456 (99)	9.16 (65)	3	13.8 (98)	5.4 (24)	23.5 (99)	47 (96)	17.8 (85)	3
36005014400	New York	Bronx	Pelham - Throgs Neck	144	5,138	5,038	98.05	5,055	2,998	59.31	Yes	1,900 (91)	30 (83)	0.5 (95)	0.87 (97)	8.79 (55)	2	12.7 (94)	5.7 (29)	17.7 (94)	37.7 (79)	16.1 (72)	2
36005014500	New York	Bronx	High Bridge - Morrisania	145	7,436	7,203	96.87	7,173	5,566	77.6	Yes	560 (69)	40 (97)	0.6 (98)	1.229 (98)	9.15 (65)	3	14.9 (99)	4.7 (14)	19.9 (97)	39.5 (85)	20.7 (96)	3
36005014701	New York	Bronx	High Bridge - Morrisania	147.01	7,003	6,949	99.23	6,866	5,829	84.9	Yes	460 (64)	40 (97)	0.6 (98)	1.202 (98)	9.14 (65)	3	15.9 (100)	4.6 (12)	21.7 (98)	40.5 (87)	22.5 (98)	3
36005014702	New York	Bronx	High Bridge - Morrisania	147.02	5,435	5,371	98.82	5,435	3,539	65.12	Yes	630 (72)	40 (97)	0.6 (98)	1.205 (98)	9.15 (65)	3	14.3 (98)	4.7 (14)	17.8 (94)	38.1 (81)	19 (91)	3
36005014900	New York	Bronx	High Bridge - Morrisania	149	4,419	4,328	97.94	4,201	2,451	58.34	Yes	440 (63)	40 (97)	0.6 (98)	1.167 (98)	9.13 (64)	3	13.3 (96)	4.9 (16)	17.4 (93)	37.8 (80)	17.5 (83)	2
36005015100	New York	Bronx	Hunts Point - Mott Haven	151	5,309	5,235	98.61	5,261	3,456	65.69	Yes	630 (72)	40 (97)	0.6 (98)	1.167 (98)	9.11 (64)	3	12.8 (95)	4.1 (7)	14.1 (81)	33.8 (61)	16.3 (74)	1
36005015200	New York	Bronx	Pelham - Throgs Neck	152	2,481	1,691	68.16	2,481	869	35.03	Yes	2,700 (95)	40 (97)	0.5 (95)	0.876 (97)	8.81 (55)	3	10.2 (62)	6.6 (47)	11.6 (61)	29.5 (36)	12.2 (29)	0
36005015300	New York	Bronx	Hunts Point - Mott Haven	153	4,474	4,460	99.69	4,425	2,771	62.62	Yes	830 (78)	40 (97)	0.6 (98)	1.155 (98)	9.1 (63)	3	13.3 (96)	4.5 (11)	16.7 (92)	37.3 (78)	17.1 (80)	2
36005015500	New York	Bronx	Crotona - Tremont	155	2,927	2,927	100	2,927	2,198	75.09	Yes	1,800 (91)	40 (97)	0.6 (98)	1.144 (98)	9.1 (63)	3	12.8 (95)	5 (18)	19.4 (96)	37.3 (78)	18.2 (87)	2
36005015700	New York	Bronx	Crotona - Tremont	157	4,704	4,650	98.85	4,682	2,871	61.32	Yes	910 (80)	40 (97)	0.6 (98)	1.145 (98)	9.08 (63)	3	12.9 (95)	4.1 (7)	15.5 (88)	32.8 (55)	17.5 (83)	1



## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

FIPS	State	County	Place Name	Tract	Total Population	Total Minority	% Minority	Total Population for Whom Poverty Status is Determined	Individuals Living in Poverty	% Poverty	Identified Environmental Justice Tract (Yes or No)	Traffic Proximity And Volume [Daily vehicles/ meters (Percentile)]	Pollutant Burdens					Chronic Disease Burdens						
													Air Toxics Cancer Risk [Lifetime risk per million (Percentile)]	Air Toxics Respiratory Hazard Index [Ratio of exposure to health-based reference concentration (Percentile)]	Diesel Particulate Matter [µg/m3 (Percentile)]	Particulate Matter 2.5 [µg/m3 (Percentile)]	Number of Pollutant Burdens at/above 90th Percentile	Asthma [% adults (Percentile rank)]	Cancer [% adults (Percentage rank)]	Diabetes [% adults (Percentile rank)]	High Blood Pressures [% adults (Percentile rank)]	Poor Mental Health [% adults (Percentage rank)]	Number of Chronic Disease Burdens above 90th Percentile	
36005015800	New York	Bronx	Pelham - Throgs Neck	158	1,314	782	59.51	1,311	347	26.47	Yes	3,100 (95)	30 (83)	0.5 (95)	0.85 (97)	8.78 (54)	2	10.1 (60)	6.2 (39)	10 (41)	27.5 (24)	12.4 (32)	0	
36005015900	New York	Bronx	Hunts Point - Mott Haven	159	1,969	1,955	99.29	1,959	1,400	71.47	Yes	3,200 (96)	40 (97)	0.6 (98)	1.298 (98)	9.09 (63)	3	12.6 (94)	5.1 (19)	20.3 (97)	37.4 (78)	18.5 (88)	2	
36005016100	New York	Bronx	Crotona - Tremont	161	4,650	4,623	99.42	4,650	3,375	72.58	Yes	4,100 (97)	40 (97)	0.6 (98)	1.135 (98)	9.08 (63)	3	14 (98)	5 (18)	20 (97)	38.4 (82)	19.5 (92)	3	
36005016200	New York	Bronx	Pelham - Throgs Neck	162	1,870	1,279	68.4	1,675	525	31.34	Yes	1,600 (89)	40 (97)	0.5 (95)	0.87 (97)	8.8 (55)	3	10.6 (72)	8.8 (91)	13.1 (74)	37 (77)	12.5 (33)	1	
36005016500	New York	Bronx	Crotona - Tremont	165	965	965	100	965	661	68.5	Yes	5,900 (98)	40 (97)	0.6 (98)	1.187 (98)	9.13 (65)	3	13.5 (97)	3.8 (5)	14.8 (85)	33.5 (59)	18 (86)	1	
36005016600	New York	Bronx	Pelham - Throgs Neck	166	2,244	1,764	78.61	2,244	623	27.76	Yes	2,900 (95)	40 (97)	0.5 (95)	0.893 (97)	8.83 (56)	3	10 (57)	6.5 (45)	11.3 (57)	29.3 (34)	12 (27)	0	
36005016700	New York	Bronx	Crotona - Tremont	167	3,695	3,663	99.13	3,491	2,342	67.09	Yes	1,500 (88)	40 (97)	0.6 (98)	1.191 (98)	9.15 (65)	3	13.5 (97)	3.9 (5)	15 (86)	35.2 (69)	17.7 (84)	1	
36005016900	New York	Bronx	Crotona - Tremont	169	1,633	1,628	99.69	1,572	952	60.56	Yes	700 (75)	40 (97)	0.6 (98)	1.193 (98)	9.15 (65)	3	13.7 (97)	4.2 (8)	15.5 (88)	35.6 (70)	18 (86)	1	
36005017300	New York	Bronx	High Bridge - Morrisania	173	5,746	5,583	97.16	5,733	3,732	65.1	Yes	1,000 (83)	40 (97)	0.6 (98)	1.543 (99)	9.18 (66)	3	13.4 (97)	5.1 (19)	18.8 (96)	39.4 (84)	17.9 (85)	2	
36005017500	New York	Bronx	High Bridge - Morrisania	175	6,536	6,351	97.17	6,433	4,166	64.76	Yes	580 (70)	40 (97)	0.6 (98)	1.399 (99)	9.17 (66)	3	13.5 (97)	4.9 (16)	18.1 (95)	37.5 (78)	18 (86)	2	
36005017701	New York	Bronx	High Bridge - Morrisania	177.01	4,650	4,588	98.67	4,236	2,436	57.51	Yes	800 (78)	40 (97)	0.6 (98)	1.277 (98)	9.17 (65)	3	13.2 (96)	5.3 (22)	18 (94)	39 (83)	17.2 (81)	2	
36005017702	New York	Bronx	High Bridge - Morrisania	177.02	5,423	5,315	98.01	5,423	3,180	58.64	Yes	830 (79)	40 (97)	0.6 (98)	1.251 (98)	9.16 (65)	3	13.2 (96)	4.8 (15)	16.8 (92)	36.8 (76)	17.2 (81)	2	
36005017901	New York	Bronx	High Bridge - Morrisania	179.01	4,831	4,770	98.74	4,831	2,827	58.52	Yes	970 (82)	40 (97)	0.6 (98)	1.299 (98)	9.18 (66)	3	12.2 (92)	4.1 (7)	15.7 (89)	33.1 (57)	17.2 (81)	1	
36005017902	New York	Bronx	High Bridge - Morrisania	179.02	4,032	4,014	99.55	4,032	2,091	51.86	Yes	1,100 (84)	40 (97)	0.6 (98)	1.282 (98)	9.18 (66)	3	12.9 (95)	3.9 (5)	15.2 (87)	35.2 (69)	17.9 (85)	1	
36005018101	New York	Bronx	High Bridge - Morrisania	181.01	3,351	3,340	99.67	3,350	1,832	54.69	Yes	590 (71)	40 (97)	0.6 (98)	1.393 (99)	9.18 (66)	3	13.6 (97)	4.1 (7)	15.8 (89)	35 (68)	18.6 (89)	1	
36005018102	New York	Bronx	High Bridge - Morrisania	181.02	5,294	5,199	98.21	5,061	3,382	66.82	Yes	620 (72)	40 (97)	0.6 (98)	1.395 (99)	9.19 (66)	3	12.7 (94)	4.6 (12)	17.5 (94)	36.2 (73)	17.3 (82)	2	
36005018301	New York	Bronx	High Bridge - Morrisania	183.01	4,320	4,073	94.28	4,320	1,770	40.97	Yes	890 (80)	40 (97)	0.6 (98)	1.548 (99)	9.19 (66)	3	11.6 (87)	6.3 (41)	17.1 (93)	39.6 (85)	13.4 (43)	1	
36005018302	New York	Bronx	High Bridge - Morrisania	183.02	3,824	3,723	97.36	3,824	2,038	53.3	Yes	650 (73)	40 (97)	0.6 (98)	1.542 (99)	9.19 (66)	3	12.4 (93)	4.2 (8)	14.6 (84)	35.1 (68)	16 (71)	1	
36005018400	New York	Bronx	Pelham - Throgs Neck	184	3,793	2,254	59.43	3,793	836	22.04	Yes	2,600 (94)	40 (97)	0.5 (95)	0.894 (97)	8.86 (57)	3	10.5 (70)	7.1 (59)	10.5 (47)	30.7 (43)	12.6 (34)	0	
36005018500	New York	Bronx	High Bridge - Morrisania	185	9,001	8,944	99.37	8,922	5,552	62.23	Yes	850 (79)	40 (97)	0.6 (98)	1.363 (99)	9.14 (65)	3	13.2 (96)	3.8 (5)	14.3 (82)	32.7 (55)	17.7 (84)	1	
36005018900	New York	Bronx	High Bridge - Morrisania	189	8,210	7,870	95.86	8,066	5,177	64.18	Yes	5,100 (98)	40 (97)	0.6 (98)	1.517 (99)	9.23 (67)	3	12.6 (94)	4.2 (8)	15.4 (88)	33.5 (59)	17.1 (80)	1	
36005019300	New York	Bronx	High Bridge - Morrisania	193	6,350	6,329	99.67	6,350	4,767	75.07	Yes	3,800 (97)	40 (97)	0.6 (98)	1.336 (99)	9.23 (67)	3	13.2 (96)	4.7 (14)	17.6 (94)	36.4 (74)	17.7 (84)	2	
36005019400	New York	Bronx	Pelham - Throgs Neck	194	2,375	2,017	84.93	2,375	1,080	45.47	Yes	1,800 (91)	40 (97)	0.5 (95)	0.901 (97)	8.87 (57)	3	10.5 (70)	5.6 (27)	11.7 (62)	28.4 (29)	13.4 (43)	0	
36005019500	New York	Bronx	High Bridge - Morrisania	195	7,060	6,918	97.99	6,994	4,039	57.75	Yes	610 (71)	40 (97)	0.6 (98)	1.477 (99)	9.2 (66)	3	12.3 (92)	4.5 (11)	16.1 (90)	33.4 (59)	16.4 (75)	2	
36005019700	New York	Bronx	High Bridge - Morrisania	197	7,561	7,485	98.99	7,527	4,615	61.31	Yes	770 (77)	40 (97)	0.6 (98)	1.311 (98)	9.2 (66)	3	12.2 (92)	4 (6)	15.7 (89)	32.7 (55)	17.8 (85)	1	

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

36005019900	New York	Bronx	High Bridge - Morrisania	199	8,338	8,195	98.29	8,338	4,183	50.17	Yes	1,900 (91)	40 (97)	0.6 (98)	1.314 (98)	9.22 (67)	3	12.4 (93)	4.2 (8)	14.9 (85)	32.7 (55)	16.5 (76)	1
36005020000	New York	Bronx	Pelham - Throgs Neck	200	4,711	4,581	97.24	4,700	2,842	60.47	Yes	830 (78)	40 (97)	0.5 (95)	0.94 (97)	8.93 (59)	3	10.3 (65)	4.1 (7)	13.6 (78)	29 (33)	14.3 (54)	0
36005020100	New York	Bronx	High Bridge - Morrisania	201	3,993	3,861	96.69	3,943	2,528	64.11	Yes	6,600 (98)	40 (97)	0.6 (98)	1.298 (98)	9.23 (67)	3	13 (95)	4.3 (9)	16 (90)	34.5 (65)	17.6 (84)	2
36005020200	New York	Bronx	Pelham - Throgs Neck	202	2,385	2,281	95.64	2,348	1,260	53.66	Yes	400 (60)	40 (97)	0.5 (95)	0.943 (97)	8.93 (59)	3	10.7 (74)	4.6 (12)	13.3 (76)	31.3 (46)	14.5 (56)	0
36005020400	New York	Bronx	Pelham - Throgs Neck	204	3,011	2,742	91.07	3,005	1,210	40.27	Yes	490 (66)	40 (97)	0.5 (95)	0.961 (97)	8.96 (60)	3	10.9 (77)	4.5 (11)	12.5 (69)	28.4 (29)	14.7 (58)	0
36005020501	New York	Bronx	Crotona - Tremont	205.01	6,976	6,903	98.95	6,955	4,669	67.13	Yes	5,800 (98)	40 (97)	0.6 (98)	1.282 (98)	9.22 (67)	3	13.9 (98)	4.9 (16)	18.9 (96)	37.3 (78)	18.8 (90)	3
36005020502	New York	Bronx	Crotona - Tremont	205.02	2,160	2,124	98.33	2,160	1,201	55.6	Yes	3,300 (96)	40 (97)	0.6 (98)	1.277 (98)	9.21 (67)	3	13 (95)	6 (35)	20.9 (98)	41.3 (89)	16.9 (79)	2
36005020601	New York	Bronx	Pelham - Throgs Neck	206.01	2,237	2,158	96.47	2,237	1,134	50.69	Yes	670 (74)	40 (97)	0.5 (95)	0.95 (97)	8.94 (59)	3	10.4 (67)	5.7 (29)	14.7 (85)	33.8 (61)	13.2 (41)	0
36005020900	New York	Bronx	High Bridge - Morrisania	209	4,287	4,123	96.17	4,287	2,624	61.21	Yes	4,200 (97)	40 (97)	0.6 (98)	1.28 (98)	9.19 (66)	3	12.3 (92)	4.4 (10)	15 (86)	33.1 (57)	16 (71)	1
36005021001	New York	Bronx	Pelham - Throgs Neck	210.01	8,930	8,735	97.82	8,930	2,893	32.4	Yes	490 (66)	40 (97)	0.5 (95)	1.048 (97)	8.99 (61)	3	11.6 (87)	5.2 (21)	13.5 (77)	35.8 (71)	12.8 (36)	0
36005021002	New York	Bronx	Pelham - Throgs Neck	210.02	7,613	7,527	98.87	7,613	2,705	35.53	Yes	620 (72)	40 (97)	0.5 (95)	1.02 (97)	8.98 (60)	3	11.5 (86)	5.3 (22)	13.6 (78)	34.2 (63)	12.4 (32)	0
36005021100	New York	Bronx	High Bridge - Morrisania	211	5,343	5,303	99.25	5,299	3,437	64.86	Yes	3,300 (96)	40 (97)	0.6 (98)	1.298 (98)	9.22 (67)	3	13.2 (96)	4.2 (8)	16.3 (91)	34.3 (64)	18.3 (88)	2
36005021200	New York	Bronx	Pelham - Throgs Neck	212	4,850	4,782	98.6	4,850	1,447	29.84	Yes	2,200 (93)	40 (97)	0.5 (95)	1.039 (97)	8.98 (60)	3	10.9 (77)	4.9 (16)	12.9 (73)	32.3 (52)	12.1 (28)	0
36005021301	New York	Bronx	High Bridge - Morrisania	213.01	1,267	1,197	94.48	1,267	699	55.17	Yes	6,300 (98)	40 (97)	0.6 (98)	1.284 (98)	9.21 (67)	3	12.2 (92)	4.4 (10)	16 (90)	33.4 (59)	16.5 (76)	2
36005021302	New York	Bronx	High Bridge - Morrisania	213.02	5,513	5,495	99.67	5,513	3,442	62.43	Yes	3,600 (96)	40 (97)	0.6 (98)	1.296 (98)	9.21 (67)	3	13.2 (96)	4.7 (14)	18.3 (95)	36.4 (74)	17.9 (85)	2
36005021501	New York	Bronx	Crotona - Tremont	215.01	4,565	4,509	98.77	4,396	2,438	55.46	Yes	2,900 (95)	40 (97)	0.6 (98)	1.278 (98)	9.21 (67)	3	12.5 (93)	3.9 (5)	13.8 (79)	30.2 (40)	16.7 (77)	1
36005021502	New York	Bronx	Crotona - Tremont	215.02	6,532	6,513	99.71	6,344	4,513	71.14	Yes	3,500 (96)	40 (97)	0.6 (98)	1.278 (98)	9.2 (67)	3	13 (95)	3.9 (5)	15.7 (89)	32.4 (53)	18.4 (88)	1
36005021601	New York	Bronx	Crotona - Tremont	216.01	4,720	4,521	95.78	4,720	2,637	55.87	Yes	1,300 (86)	40 (97)	0.5 (95)	1.095 (98)	9 (61)	3	11.8 (89)	4.4 (10)	15.1 (86)	32.8 (55)	16.6 (77)	0
36005021602	New York	Bronx	Pelham - Throgs Neck	216.02	5,632	5,419	96.22	5,614	2,018	35.95	Yes	1,900 (91)	40 (97)	0.5 (95)	1.076 (98)	8.99 (61)	3	11.8 (89)	4.9 (16)	14.7 (85)	35.4 (70)	14.1 (52)	0
36005021700	New York	Bronx	Crotona - Tremont	217	5,124	5,023	98.03	5,078	2,860	56.32	Yes	4,100 (97)	40 (97)	0.6 (98)	1.276 (98)	9.19 (66)	3	13.5 (97)	4.3 (9)	16.9 (92)	37.1 (77)	17.9 (85)	2
36005021800	New York	Bronx	Crotona - Tremont	218	6,520	6,377	97.81	6,507	3,720	57.17	Yes	2,100 (92)	40 (97)	0.6 (98)	1.101 (98)	9.02 (61)	3	12.2 (92)	4.4 (10)	14.5 (84)	32.2 (52)	16 (71)	1
36005021900	New York	Bronx	High Bridge - Morrisania	219	882	849	96.26	872	424	48.62	Yes	1,700 (90)	40 (97)	0.6 (98)	1.294 (98)	9.2 (67)	3	12.9 (95)	4.2 (8)	18 (94)	33.5 (59)	19 (91)	3
36005022000	New York	Bronx	Crotona - Tremont	220	2,007	1,977	98.51	1,894	1,236	65.26	Yes	3,100 (95)	40 (97)	0.6 (98)	1.111 (98)	9.04 (62)	3	11.4 (85)	3.5 (3)	12.5 (69)	29.5 (36)	16.7 (77)	0
36005022101	New York	Bronx	High Bridge - Morrisania	221.01	4,133	4,122	99.73	4,122	2,544	61.72	Yes	700 (74)	40 (97)	0.6 (98)	1.291 (98)	9.21 (67)	3	12.2 (92)	3.7 (4)	14.6 (84)	30.8 (43)	17.6 (84)	1
36005022102	New York	Bronx	High Bridge - Morrisania	221.02	5,411	5,356	98.98	5,411	4,125	76.23	Yes	990 (82)	40 (97)	0.6 (98)	1.283 (98)	9.19 (66)	3	12.9 (95)	3.9 (5)	17.9 (94)	33.7 (61)	20.1 (94)	3
36005022200	New York	Bronx	Pelham - Throgs Neck	222	3,293	3,112	94.5	3,272	1,475	45.08	Yes	1,800 (91)	40 (97)	0.5 (95)	0.999 (97)	8.96 (60)	3	10.6 (72)	4.2 (8)	13.3 (76)	29.2 (34)	14.3 (54)	0
36005022300	New York	Bronx	High Bridge - Morrisania	223	5,278	5,152	97.61	5,143	3,205	62.32	Yes	1,500 (88)	40 (97)	0.6 (98)	1.292 (98)	9.19 (66)	3	12.7 (94)	4.5 (11)	18 (94)	35.7 (71)	18.2 (87)	2
36005022401	New York	Bronx	Pelham - Throgs Neck	224.01	2,498	2,298	91.99	2,492	1,010	40.53	Yes	3,600 (96)	40 (97)	0.6 (98)	1.094 (98)	9.06 (62)	3	10.7 (74)	5.2 (21)	12.5 (69)	31.1 (45)	13.4 (43)	0
36005022403	New York	Bronx	Pelham - Throgs Neck	224.03	3,194	2,563	80.24	3,194	1,207	37.79	Yes	960 (81)	40 (97)	0.5 (95)	1.071 (98)	9.05 (62)	3	11.1 (81)	5.2 (21)	12.7 (71)	31.6 (48)	14.1 (52)	0
36005022404	New York	Bronx	Pelham - Throgs Neck	224.04	4,203	3,457	82.25	4,203	1,446	34.4	Yes	1,300 (86)	40 (97)	0.5 (95)	1.092 (98)	9.04 (62)	3	10.4 (67)	5 (18)	10.1 (42)	29.1 (33)	12.6 (34)	0

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

FIPS	State	County	Place Name	Tract	Total Population	Total Minority	% Minority	Total Population for Whom Poverty Status is Determined	Individuals Living in Poverty	% Poverty	Identified Environmental Justice Tract (Yes or No)	Traffic Proximity And Volume [Daily vehicles/ meters (Percentile)]	Pollutant Burdens					Chronic Disease Burdens						
													Air Toxics Cancer Risk [Lifetime risk per million (Percentile)]	Air Toxics Respiratory Hazard Index [Ratio of exposure to health-based reference concentration (Percentile)]	Diesel Particulate Matter [µg/m3 (Percentile)]	Particulate Matter 2.5 [µg/m3 (Percentile)]	Number of Pollutant Burdens at/above 90th Percentile	Asthma [% adults (Percentile rank)]	Cancer [% adults (Percentage rank)]	Diabetes [% adults (Percentile rank)]	High Blood Pressures [% adults (Percentile rank)]	Poor Mental Health [% adults (Percentage rank)]	Number of Chronic Disease Burdens above 90th Percentile	
36005022500	New York	Bronx	Crotona - Tremont	225	8,499	8,187	96.33	8,153	5,191	63.67	Yes	1,900 (91)	40 (97)	0.6 (98)	1.276 (98)	9.17 (66)	3	12.7 (94)	4.1 (7)	15.2 (87)	34.3 (64)	17.5 (83)	1	
36005022701	New York	Bronx	Crotona - Tremont	227.01	5,151	5,073	98.49	5,073	3,036	59.85	Yes	5,000 (98)	40 (97)	0.6 (98)	1.275 (98)	9.18 (66)	3	12.4 (93)	4.1 (7)	14.5 (84)	31.7 (49)	16.5 (76)	1	
36005022702	New York	Bronx	High Bridge-Morrisania	227.02	1,607	1,607	100	1,607	927	57.69	Yes	7,300 (99)	40 (97)	0.6 (98)	1.278 (98)	9.19 (66)	3	12.1 (91)	4.2 (8)	15.6 (88)	32.2 (52)	16.4 (75)	1	
36005022703	New York	Bronx	Crotona - Tremont	227.03	1,688	1,614	95.62	1,688	779	46.15	Yes	6,600 (99)	40 (97)	0.6 (98)	1.271 (98)	9.17 (66)	3	11.1 (81)	4.1 (7)	13.1 (74)	28 (27)	14.6 (57)	0	
36005022800	New York	Bronx	Pelham - Throgs Neck	228	6,128	5,040	82.25	6,128	2,125	34.68	Yes	380 (59)	40 (97)	0.5 (95)	1.074 (98)	9.03 (62)	3	10.5 (70)	5 (18)	11.2 (56)	29.2 (34)	13.1 (40)	0	
36005022901	New York	Bronx	Crotona - Tremont	229.01	5,743	5,655	98.47	5,743	3,317	57.76	Yes	5,300 (98)	40 (97)	0.6 (98)	1.249 (98)	9.17 (66)	3	12.8 (95)	4 (6)	16.4 (91)	32.6 (54)	18.6 (89)	2	
36005022902	New York	Bronx	Crotona - Tremont	229.02	3,614	3,582	99.11	3,603	2,328	64.61	Yes	4,700 (97)	40 (97)	0.6 (98)	1.238 (98)	9.17 (66)	3	12.6 (94)	4 (6)	15.1 (86)	32.4 (53)	17.5 (83)	1	
36005023000	New York	Bronx	Pelham - Throgs Neck	230	2,802	2,269	80.98	2,802	1,538	54.89	Yes	1,500 (89)	40 (97)	0.5 (95)	1.098 (98)	9.03 (62)	3	11 (79)	4.7 (14)	12.7 (71)	30 (39)	14.7 (58)	0	
36005023100	New York	Bronx	Crotona - Tremont	231	1,537	1,497	97.4	1,445	1,011	69.97	Yes	4,400 (97)	40 (97)	0.6 (98)	1.205 (98)	9.16 (65)	3	13.6 (97)	4 (6)	18.3 (95)	37 (77)	19.7 (93)	3	
36005023200	New York	Bronx	Pelham - Throgs Neck	232	2,476	1,772	71.57	2,464	986	40.02	Yes	670 (74)	40 (97)	0.5 (95)	1.09 (98)	9.02 (61)	3	10.8 (76)	5.2 (21)	12.5 (69)	29.3 (34)	14.2 (53)	0	
36005023301	New York	Bronx	Crotona - Tremont	233.01	3,956	3,956	100	3,948	2,013	50.99	Yes	2,100 (92)	40 (97)	0.6 (98)	1.269 (98)	9.17 (66)	3	12.4 (93)	4.4 (10)	16.6 (91)	35.7 (71)	16.6 (77)	2	
36005023302	New York	Bronx	Crotona - Tremont	233.02	3,706	3,659	98.73	3,661	2,173	59.36	Yes	3,300 (96)	40 (97)	0.6 (98)	1.23 (98)	9.16 (65)	3	11.9 (90)	3.8 (5)	15 (86)	31.4 (47)	17.5 (83)	1	
36005023501	New York	Bronx	Crotona - Tremont	235.01	3,184	3,163	99.34	3,184	1,881	59.08	Yes	1,400 (87)	40 (97)	0.6 (98)	1.239 (98)	9.16 (65)	3	12.6 (94)	4.1 (7)	17 (93)	33.3 (58)	18.5 (88)	2	
36005023502	New York	Bronx	Crotona - Tremont	235.02	4,153	4,136	99.59	4,127	2,298	55.68	Yes	1,500 (88)	40 (97)	0.6 (98)	1.226 (98)	9.16 (65)	3	12 (90)	5.9 (33)	19.8 (97)	38.1 (81)	16.2 (73)	2	
36005023600	New York	Bronx	Pelham - Throgs Neck	236	1,816	1,252	68.94	1,754	763	43.5	Yes	1,300 (86)	40 (97)	0.6 (98)	1.106 (98)	9.02 (61)	3	12.1 (91)	5.2 (21)	15.1 (86)	32.8 (55)	16.7 (77)	1	
36005023702	New York	Bronx	Fordham - Bronx Park	237.02	1,180	1,169	99.07	1,180	669	56.69	Yes	2,300 (93)	40 (97)	0.6 (98)	1.16 (98)	9.15 (65)	3	12 (90)	3.8 (5)	14 (81)	31 (45)	16.9 (79)	1	
36005023703	New York	Bronx	Fordham - Bronx Park	237.03	5,574	5,503	98.73	5,448	3,109	57.07	Yes	1,500 (89)	40 (97)	0.6 (98)	1.184 (98)	9.16 (65)	3	12.3 (92)	3.8 (5)	15.1 (86)	31.4 (47)	18.1 (86)	1	
36005023704	New York	Bronx	Crotona - Tremont	237.04	3,803	3,789	99.63	3,802	3,295	86.66	Yes	750 (76)	40 (97)	0.6 (98)	1.208 (98)	9.16 (65)	3	13.9 (98)	3.9 (5)	18.3 (95)	34.1 (63)	21.3 (97)	3	
36005023800	New York	Bronx	Pelham - Throgs Neck	238	2,241	1,832	81.75	2,227	839	37.67	Yes	440 (63)	40 (97)	0.5 (95)	1.087 (98)	9 (61)	3	10.7 (74)	4.6 (12)	10.9 (52)	28.2 (28)	14.2 (53)	0	
36005023900	New York	Bronx	Fordham - Bronx Park	239	7,873	7,873	100	7,836	4,951	63.18	Yes	900 (80)	40 (97)	0.6 (98)	1.216 (98)	9.16 (65)	3	12.8 (95)	3.8 (5)	15.8 (89)	31.7 (49)	19 (91)	2	
36005024000	New York	Bronx	Crotona - Tremont	240	3,903	3,494	89.52	3,878	1,781	45.93	Yes	1,500 (89)	40 (97)	0.5 (95)	1.105 (98)	9.03 (62)	3	11.9 (90)	4.5 (11)	14.4 (83)	31.4 (47)	15.9 (71)	1	
36005024100	New York	Bronx	Crotona - Tremont	241	6,621	6,316	95.39	6,597	3,641	55.19	Yes	880 (80)	40 (97)	0.6 (98)	1.256 (98)	9.17 (66)	3	12.3 (92)	4 (6)	14.8 (85)	32.6 (54)	17 (80)	1	
36005024300	New York	Bronx	Crotona - Tremont	243	5,737	5,663	98.71	5,737	3,467	60.43	Yes	770 (77)	40 (97)	0.6 (98)	1.272 (98)	9.18 (66)	3	12.9 (95)	4.3 (9)	17.3 (93)	35.9 (72)	18 (86)	2	
36005024400	New York	Bronx	Pelham - Throgs Neck	244	2,146	1,398	65.14	2,146	569	26.51	Yes	340 (55)	40 (97)	0.5 (95)	1.048 (97)	8.99 (61)	3	10.1 (60)	6.6 (47)	10.1 (42)	28.8 (31)	12.2 (29)	0	
36005024501	New York	Bronx	Crotona - Tremont	245.01	4,871	4,803	98.6	4,871	3,572	73.33	Yes	2,200 (93)	40 (97)	0.6 (98)	1.275 (98)	9.2 (67)	3	13 (95)	4.5 (11)	18.7 (96)	36.2 (73)	18.7 (89)	2	



## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

36005024502	New York	Bronx	Crotona - Tremont	245.02	3,677	3,649	99.24	3,577	2,271	63.49	Yes	1,700 (90)	40 (97)	0.6 (98)	1.273 (98)	9.2 (66)	3	13.1 (96)	4.2 (8)	16.7 (92)	34.2 (63)	18.5 (88)	2
36005024600	New York	Bronx	Pelham - Throgs Neck	246	2,011	1,156	57.48	2,007	458	22.82	Yes	300 (53)	40 (97)	0.5 (95)	1.077 (98)	9.02 (61)	3	10.2 (62)	6.4 (43)	11 (54)	29.3 (34)	12.6 (34)	0
36005024700	New York	Bronx	Crotona - Tremont	247	2,058	2,030	98.64	2,058	946	45.97	Yes	5,200 (98)	40 (97)	0.6 (98)	1.275 (98)	9.21 (67)	3	12.9 (95)	4.6 (12)	14.8 (85)	34.9 (67)	15.9 (71)	1
36005024800	New York	Bronx	Pelham - Throgs Neck	248	3,078	1,593	51.75	2,765	578	20.9	Yes	600 (71)	40 (97)	0.5 (95)	1.047 (97)	9.02 (61)	3	9.7 (49)	8 (80)	12.1 (66)	33.8 (61)	11.2 (19)	0
36005025000	New York	Bronx	Pelham - Throgs Neck	250	2,591	1,321	50.98	2,589	553	21.36	Yes	350 (57)	40 (97)	0.5 (95)	1.042 (97)	9 (61)	3	10 (57)	8.1 (82)	10.8 (51)	32.1 (51)	11.4 (21)	0
36005025100	New York	Bronx	Crotona - Tremont	251	7,360	7,296	99.13	7,340	4,464	60.82	Yes	460 (64)	40 (97)	0.6 (98)	1.254 (98)	9.18 (66)	3	12.3 (92)	4 (6)	16.6 (91)	32.5 (54)	17.7 (84)	2
36005025200	New York	Bronx	Pelham - Throgs Neck	252	2,787	1,684	60.42	2,780	939	33.78	Yes	330 (55)	40 (97)	0.5 (95)	1.024 (97)	8.99 (61)	3	10.4 (67)	6.8 (52)	10.4 (46)	30.5 (42)	12.4 (32)	0
36005025300	New York	Bronx	Fordham - Bronx Park	253	6,199	6,175	99.61	6,145	3,966	64.54	Yes	1,100 (84)	40 (97)	0.6 (98)	1.225 (98)	9.17 (66)	3	11.6 (87)	3.8 (5)	14.1 (81)	29.6 (36)	16.6 (77)	0
36005025400	New York	Bronx	Pelham - Throgs Neck	254	1,997	805	40.31	1,997	667	33.4	Yes	540 (68)	40 (97)	0.5 (95)	1.002 (97)	8.98 (60)	3	10.7 (74)	7.9 (78)	11.2 (56)	32.8 (55)	12.7 (35)	0
36005025500	New York	Bronx	Fordham - Bronx Park	255	7,674	7,441	96.96	7,647	4,466	58.4	Yes	2,600 (94)	40 (97)	0.6 (98)	1.24 (98)	9.18 (66)	3	11.6 (87)	4.3 (9)	14.7 (85)	30.1 (39)	16 (71)	0
36005025600	New York	Bronx	Pelham - Throgs Neck	256	1,696	1,432	84.43	1,625	647	39.82	Yes	1,000 (82)	40 (97)	0.5 (95)	0.966 (97)	8.96 (60)	3	11.2 (82)	6.3 (41)	13.9 (80)	34.4 (64)	14.1 (52)	0
36005025700	New York	Bronx	Crotona - Tremont	257	1,999	1,963	98.2	1,999	817	40.87	Yes	7,200 (99)	40 (97)	0.6 (98)	1.257 (98)	9.19 (66)	3	10.8 (76)	4.3 (9)	12.6 (70)	29.9 (38)	13.8 (48)	0
36005026100	New York	Bronx	Fordham - Bronx Park	261	2,097	1,998	95.28	2,027	195	9.62	Yes	2,300 (93)	40 (97)	0.5 (95)	1.115 (98)	9.17 (66)	3	10.3 (65)	7.5 (69)	13.4 (77)	38.6 (82)	9 (3)	0
36005026300	New York	Bronx	Fordham - Bronx Park	263	6,218	5,674	91.25	5,692	3,993	70.15	Yes	1,400 (88)	40 (97)	0.5 (95)	1.149 (98)	9.18 (66)	3	11.6 (87)	7.1 (59)	18.5 (95)	39.5 (85)	15.1 (63)	1
36005026400	New York	Bronx	Pelham - Throgs Neck	264	4,868	3,254	66.84	4,868	1,331	27.34	Yes	2,000 (92)	40 (97)	0.5 (95)	0.902 (97)	8.87 (57)	3	10.3 (65)	6.6 (47)	9.8 (38)	28 (27)	12.5 (33)	0
36005026500	New York	Bronx	Fordham - Bronx Park	265	7,851	7,607	96.89	7,666	4,958	64.68	Yes	1,300 (86)	40 (97)	0.5 (95)	1.105 (98)	9.16 (65)	3	11 (79)	4.1 (7)	13.6 (78)	28.9 (32)	15.4 (66)	0
36005026601	New York	Bronx	Pelham - Throgs Neck	266.01	3,452	2,569	74.42	3,452	982	28.45	Yes	1,800 (91)	40 (97)	0.5 (95)	0.91 (97)	8.9 (58)	3	10.5 (70)	7.8 (76)	12.4 (69)	33.4 (59)	12.6 (34)	0
36005026602	New York	Bronx	Pelham - Throgs Neck	266.02	5,084	3,313	65.17	5,084	1,631	32.08	Yes	2,500 (94)	40 (97)	0.5 (95)	0.9 (97)	8.87 (57)	3	10.7 (74)	7.1 (59)	12.3 (68)	32.4 (53)	13 (39)	0
36005026701	New York	Bronx	Fordham - Bronx Park	267.01	4,185	4,068	97.2	4,185	2,198	52.52	Yes	1,700 (90)	40 (97)	0.5 (95)	1.021 (97)	9.16 (65)	3	10.6 (72)	4 (6)	13.7 (79)	28.5 (30)	14.7 (58)	0
36005026702	New York	Bronx	Fordham - Bronx Park	267.02	7,895	7,659	97.01	7,815	5,308	67.92	Yes	1,500 (88)	40 (97)	0.5 (95)	0.988 (97)	9.16 (65)	3	11.8 (89)	4.3 (9)	13.9 (80)	29.7 (37)	15.9 (71)	0
36005026900	New York	Bronx	Kingsbridge - Riverdale	269	3,703	3,696	99.81	3,703	1,973	53.28	Yes	5,100 (98)	40 (97)	0.5 (95)	1.075 (98)	9.18 (66)	3	10.8 (76)	4.7 (14)	13.5 (77)	30.6 (42)	13.4 (43)	0
36005027300	New York	Bronx	Kingsbridge - Riverdale	273	7,778	7,332	94.27	7,557	4,096	54.2	Yes	4,900 (98)	40 (97)	0.5 (95)	0.985 (97)	9.16 (65)	3	11.2 (82)	5 (18)	14.6 (84)	31.3 (46)	14.6 (57)	0
36005027600	New York	Bronx	Pelham - Throgs Neck	276	24	24	100	24	24	100	Yes	1,900 (91)	40 (97)	0.5 (95)	0.899 (97)	8.85 (56)	3	20.6 (100)	7.1 (59)	36.3 (100)	41.4 (89)	29.8 (100)	3
36005027700	New York	Bronx	Kingsbridge - Riverdale	277	4,660	4,120	88.41	4,660	2,324	49.87	Yes	4,100 (97)	40 (97)	0.5 (95)	0.961 (97)	9.16 (65)	3	11.3 (84)	4.6 (12)	14.2 (82)	30.3 (40)	15.4 (66)	0
36005027900	New York	Bronx	Kingsbridge - Riverdale	279	7,379	6,299	85.36	6,923	2,770	40.01	Yes	4,300 (97)	40 (97)	0.5 (95)	0.946 (97)	9.14 (65)	3	10 (57)	6.4 (43)	11.3 (57)	30.9 (44)	11.4 (21)	0
36005028100	New York	Bronx	Kingsbridge - Riverdale	281	3,954	2,739	69.27	3,679	934	25.39	Yes	3,000 (95)	40 (97)	0.5 (95)	0.948 (97)	9.12 (64)	3	10 (57)	8.9 (92)	12.2 (67)	35.6 (70)	10.3 (11)	1
36005028300	New York	Bronx	Kingsbridge - Riverdale	283	2,489	2,192	88.07	2,487	1,586	63.77	Yes	5,900 (98)	40 (97)	0.5 (95)	0.954 (97)	9.14 (65)	3	12.9 (95)	5.3 (22)	18.1 (95)	35.1 (68)	17.4 (82)	2
36005028400	New York	Bronx	Pelham - Throgs Neck	284	554	235	42.42	109	109	100	Yes	1,900 (91)	40 (97)	0.5 (95)	0.925 (97)	8.91 (58)	3	12.1 (91)	7.9 (78)	20.5 (97)	46.7 (96)	15.3 (65)	3
36005028500	New York	Bronx	Kingsbridge - Riverdale	285	3,523	1,910	54.22	3,495	1,164	33.3	Yes	1,100 (84)	40 (97)	0.5 (95)	0.937 (97)	9.14 (65)	3	10 (57)	6.5 (45)	10.1 (42)	28 (27)	11.5 (22)	0
36005028600	New York	Bronx	Pelham - Throgs Neck	286	1,085	601	55.39	1,085	237	21.84	Yes	1,100 (83)	40 (97)	0.5 (95)	0.958 (97)	8.96 (60)	3	9.6 (46)	6.6 (47)	9.6 (36)	29 (33)	11 (17)	0

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

FIPS	State	County	Place Name	Tract	Total Population	Total Minority	% Minority	Total Population for Whom Poverty Status is Determined	Individuals Living in Poverty	% Poverty	Identified Environmental Justice Tract (Yes or No)	Traffic Proximity And Volume [Daily vehicles/ meters (Percentile)]	Pollutant Burdens					Chronic Disease Burdens						
													Air Toxics Cancer Risk [Lifetime risk per million (Percentile)]	Air Toxics Respiratory Hazard Index [Ratio of exposure to health-based reference concentration (Percentile)]	Diesel Particulate Matter [µg/m3 (Percentile)]	Particulate Matter 2.5 [µg/m3 (Percentile)]	Number of Pollutant Burdens at/above 90th Percentile	Asthma [% adults (Percentile rank)]	Cancer [% adults (Percentage rank)]	Diabetes [% adults (Percentile rank)]	High Blood Pressures [% adults (Percentile rank)]	Poor Mental Health [% adults (Percentage rank)]	Number of Chronic Disease Burdens above 90th Percentile	
36005028700	New York	Bronx	Kingsbridge - Riverdale	287	3,153	2,389	75.77	3,153	1,017	32.26	Yes	1,800 (91)	40 (97)	0.5 (95)	0.948 (97)	9.15 (65)	3	9.5 (43)	5.9 (33)	11.2 (56)	29.6 (36)	11.3 (20)	0	
36005028800	New York	Bronx	Pelham - Throgs Neck	288	3,330	1,627	48.86	3,330	930	27.93	Yes	780 (77)	40 (97)	0.5 (95)	0.992 (97)	8.98 (60)	3	10.2 (62)	7.6 (71)	10.9 (52)	29.7 (37)	11.7 (24)	0	
36005028900	New York	Bronx	Kingsbridge - Riverdale	289	4,807	3,992	83.05	4,623	1,857	40.17	Yes	2,600 (94)	40 (97)	0.5 (95)	0.962 (97)	9.17 (65)	3	10.3 (65)	6 (35)	11.8 (63)	27.9 (26)	12.6 (34)	0	
36005029600	New York	Bronx	Pelham - Throgs Neck	296	1,575	1,210	76.83	1,484	363	24.46	Yes	970 (81)	40 (97)	0.5 (95)	0.943 (97)	8.96 (60)	3	9.1 (31)	3.4 (3)	5.9 (4)	18.2 (2)	11.5 (22)	0	
36005030000	New York	Bronx	Pelham - Throgs Neck	300	6,021	4,114	68.33	5,998	2,023	33.73	Yes	4,100 (97)	40 (97)	0.5 (95)	0.907 (97)	8.89 (58)	3	9.4 (40)	6.7 (49)	9.6 (36)	29.2 (34)	10.9 (16)	0	
36005030100	New York	Bronx	Kingsbridge - Riverdale	301	1,413	713	50.46	1,043	175	16.78	Yes	3,000 (95)	40 (97)	0.5 (95)	0.948 (97)	9.17 (66)	3	9.5 (43)	13.5 (100)	13.6 (78)	43 (92)	8.5 (2)	2	
36005030200	New York	Bronx	Northeast Bronx	302	8,704	8,262	94.92	8,702	2,351	27.02	Yes	4,600 (97)	40 (97)	0.5 (95)	0.887 (97)	8.87 (57)	3	12.2 (92)	7.2 (61)	15.8 (89)	39.9 (86)	12.2 (29)	1	
36005031000	New York	Bronx	Northeast Bronx	310	4,753	3,385	71.22	3,876	674	17.39	Yes	2,700 (94)	40 (97)	0.5 (95)	0.918 (97)	8.92 (59)	3	10.1 (60)	9.5 (95)	14.3 (82)	39.1 (84)	10.3 (11)	1	
36005031200	New York	Bronx	Northeast Bronx	312	1,678	1,115	66.45	1,677	210	12.52	Yes	500 (67)	40 (97)	0.5 (95)	0.932 (97)	8.95 (60)	3	9.6 (46)	7.5 (69)	10.2 (43)	31.5 (48)	9.8 (7)	0	
36005031400	New York	Bronx	Northeast Bronx	314	2,079	1,341	64.5	1,892	301	15.91	Yes	500 (67)	40 (97)	0.5 (95)	0.943 (97)	8.97 (60)	3	9.5 (43)	8 (80)	11.7 (62)	34 (62)	10.2 (10)	0	
36005031600	New York	Bronx	Northeast Bronx	316	1,900	1,222	64.32	1,900	373	19.63	Yes	290 (52)	40 (97)	0.5 (95)	0.956 (97)	8.98 (60)	3	10.3 (65)	6.8 (52)	10.9 (52)	31.4 (47)	11.9 (26)	0	
36005031800	New York	Bronx	Northeast Bronx	318	2,179	1,549	71.09	2,008	546	27.19	Yes	260 (48)	40 (97)	0.5 (95)	0.968 (97)	9 (61)	3	9.9 (54)	7.8 (76)	12.2 (67)	34.1 (63)	10.9 (16)	0	
36005031900	New York	Bronx	Kingsbridge - Riverdale	319	633	313	49.45	72	59	81.94	Yes	110 (29)	30 (83)	0.4 (81)	0.794 (96)	9.06 (62)	1	15 (99)	3.1 (2)	5.2 (2)	16.3 (1)	24 (99)	2	
36005032400	New York	Bronx	Northeast Bronx	324	3,177	2,815	88.61	3,098	2,208	71.27	Yes	410 (61)	40 (97)	0.5 (95)	0.994 (97)	9.03 (62)	3	14.5 (99)	5.9 (33)	20.5 (97)	38 (80)	20 (94)	3	
36005032600	New York	Bronx	Northeast Bronx	326	3,407	2,098	61.58	3,212	665	20.7	Yes	290 (51)	40 (97)	0.5 (95)	0.981 (97)	9.02 (61)	3	10.4 (67)	7.2 (61)	13 (74)	34.5 (65)	12.3 (30)	0	
36005032800	New York	Bronx	Fordham - Bronx Park	328	3,839	3,323	86.56	3,838	2,341	61	Yes	460 (64)	40 (97)	0.5 (95)	1.004 (97)	9.05 (62)	3	12 (90)	5.2 (21)	13.9 (80)	33.7 (61)	15.5 (67)	1	
36005033000	New York	Bronx	Fordham - Bronx Park	330	5,776	3,270	56.61	5,742	2,922	50.89	Yes	740 (76)	40 (97)	0.5 (95)	1.014 (97)	9.06 (62)	3	11.5 (86)	5.5 (26)	13.6 (78)	32.9 (56)	15.5 (67)	0	
36005033201	New York	Bronx	Fordham - Bronx Park	332.01	5,564	4,727	84.96	5,544	2,583	46.59	Yes	2,600 (94)	40 (97)	0.5 (95)	1.044 (97)	9.07 (63)	3	10.9 (77)	6.6 (47)	14.4 (83)	33.2 (58)	13.2 (41)	0	
36005033202	New York	Bronx	Fordham - Bronx Park	332.02	4,033	3,526	87.43	3,588	1,345	37.49	Yes	1,400 (87)	40 (97)	0.5 (95)	1.005 (97)	9.07 (63)	3	10.9 (77)	6.8 (52)	15 (86)	37.4 (78)	12.6 (34)	0	
36005033400	New York	Bronx	Fordham - Bronx Park	334	15	15	100	15	5	33.33	Yes	3,100 (96)	40 (97)	0.6 (98)	1.094 (98)	9.08 (63)	3	9.5 (43)	4.9 (16)	8.9 (27)	28.8 (31)	10.1 (9)	0	
36005033600	New York	Bronx	Fordham - Bronx Park	336	6,714	6,499	96.8	6,694	3,225	48.18	Yes	1,700 (90)	40 (97)	0.5 (95)	0.988 (97)	9.09 (63)	3	12.4 (93)	5.2 (21)	15.2 (87)	35.4 (70)	15.1 (63)	1	
36005033800	New York	Bronx	Fordham - Bronx Park	338	4,105	3,871	94.3	4,088	1,572	38.45	Yes	330 (55)	40 (97)	0.5 (95)	0.983 (97)	9.08 (63)	3	12.9 (95)	4.4 (10)	13.5 (77)	33.4 (59)	16.3 (74)	1	
36005034000	New York	Bronx	Fordham - Bronx Park	340	5,606	5,301	94.56	5,563	2,872	51.63	Yes	380 (59)	40 (97)	0.5 (95)	0.981 (97)	9.06 (62)	3	11.9 (90)	4.8 (15)	13.4 (77)	33.5 (59)	14.5 (56)	1	
36005034200	New York	Bronx	Northeast Bronx	342	1,888	1,725	91.37	1,888	632	33.47	Yes	450 (64)	40 (97)	0.5 (95)	0.975 (97)	9.04 (62)	3	11.8 (89)	5.1 (19)	11.8 (63)	32.4 (53)	13 (39)	0	
36005034300	New York	Bronx	Kingsbridge - Riverdale	343	1,665	1,052	63.18	1,469	315	21.44	Yes	390 (60)	40 (97)	0.5 (95)	0.805 (96)	9.07 (62)	3	10.1 (60)	8.3 (85)	12.3 (68)	35.1 (68)	10.9 (16)	0	

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

36005034400	New York	Bronx	Northeast Bronx	344	2,172	2,110	97.15	2,164	763	35.26	Yes	490 (66)	40 (97)	0.5 (95)	0.969 (97)	9.04 (62)	3	12 (90)	5.7 (29)	13.5 (77)	35.5 (70)	13 (39)	1
36005034500	New York	Bronx	Kingsbridge-Riverdale	345	3,540	1,874	52.94	3,343	899	26.89	Yes	1,600 (89)	40 (97)	0.5 (95)	0.836 (96)	9.08 (63)	3	9.9 (54)	7.6 (71)	11.3 (57)	32.7 (55)	10.7 (14)	0
36005034800	New York	Bronx	Northeast Bronx	348	5,707	5,554	97.32	5,693	2,042	35.87	Yes	250 (48)	40 (97)	0.5 (95)	0.964 (97)	9.02 (61)	3	12.6 (94)	5.6 (27)	14.9 (85)	37.9 (80)	14.3 (54)	1
36005035000	New York	Bronx	Northeast Bronx	350	2,063	1,946	94.33	2,051	525	25.6	Yes	160 (36)	40 (97)	0.5 (95)	0.943 (97)	8.99 (61)	3	11.9 (90)	5.1 (19)	11.9 (64)	34.4 (64)	12.6 (34)	1
36005035600	New York	Bronx	Northeast Bronx	356	2,254	2,221	98.54	2,229	559	25.08	Yes	1,700 (90)	40 (97)	0.5 (95)	0.917 (97)	8.93 (59)	3	12.3 (92)	5.6 (27)	13.2 (75)	36.9 (76)	12.5 (33)	1
36005035800	New York	Bronx	Northeast Bronx	358	8,172	7,766	95.03	8,053	1,850	22.97	Yes	550 (69)	40 (97)	0.5 (95)	0.925 (97)	8.96 (60)	3	12.8 (95)	5.9 (33)	13.8 (79)	38.4 (82)	12.7 (35)	1
36005035900	New York	Bronx	Crotona - Tremont	359	2,053	2,042	99.46	2,040	1,370	67.16	Yes	7,000 (99)	40 (97)	0.6 (98)	1.133 (98)	9.08 (63)	3	12.7 (94)	4.5 (11)	18.1 (95)	35.7 (71)	18 (86)	2
36005036000	New York	Bronx	Northeast Bronx	360	3,271	2,883	88.14	3,075	779	25.33	Yes	560 (69)	40 (97)	0.5 (95)	0.93 (97)	8.97 (60)	3	11.1 (81)	6.6 (47)	13.8 (79)	36 (72)	12 (27)	0
36005036100	New York	Bronx	Crotona - Tremont	361	5,576	5,551	99.55	5,553	3,865	69.6	Yes	1,800 (90)	40 (97)	0.6 (98)	1.124 (98)	9.07 (63)	3	13.3 (96)	5.5 (26)	18.9 (96)	37.6 (79)	17.5 (83)	2
36005036300	New York	Bronx	Crotona - Tremont	363	7,517	7,294	97.03	7,478	5,001	66.88	Yes	710 (75)	40 (97)	0.6 (98)	1.128 (98)	9.08 (63)	3	13.6 (97)	4.2 (8)	17.6 (94)	34.1 (63)	19.9 (94)	3
36005036400	New York	Bronx	Northeast Bronx	364	2,565	2,564	99.96	2,565	766	29.86	Yes	360 (57)	40 (97)	0.5 (95)	0.94 (97)	9 (61)	3	12.8 (95)	6 (35)	13 (74)	38.2 (81)	12.3 (30)	1
36005036501	New York	Bronx	Crotona - Tremont	365.01	3,901	3,889	99.69	3,887	2,311	59.45	Yes	1,700 (90)	40 (97)	0.6 (98)	1.131 (98)	9.1 (63)	3	13.8 (98)	4.1 (7)	15.9 (89)	34.9 (67)	18.6 (89)	1
36005036502	New York	Bronx	Crotona - Tremont	365.02	2,620	2,586	98.7	2,581	1,450	56.18	Yes	6,600 (98)	40 (97)	0.6 (98)	1.14 (98)	9.1 (63)	3	12.3 (92)	3.9 (5)	13.7 (79)	31.4 (47)	16.5 (76)	1
36005036700	New York	Bronx	Crotona - Tremont	367	2,395	2,350	98.12	2,179	1,373	63.01	Yes	5,500 (98)	40 (97)	0.6 (98)	1.141 (98)	9.11 (64)	3	12.9 (95)	3.6 (3)	14.3 (82)	31.1 (45)	18.5 (88)	1
36005036800	New York	Bronx	Northeast Bronx	368	2,109	2,052	97.3	2,000	749	37.45	Yes	210 (43)	40 (97)	0.5 (95)	0.959 (97)	9.04 (62)	3	13.5 (97)	5.3 (22)	14.3 (82)	38.2 (81)	14.9 (61)	1
36005036901	New York	Bronx	Crotona - Tremont	369.01	2,101	2,098	99.86	2,089	1,490	71.33	Yes	4,700 (97)	40 (97)	0.6 (98)	1.151 (98)	9.12 (64)	3	13.7 (97)	5.3 (22)	21.2 (98)	39.8 (86)	19.1 (91)	3
36005036902	New York	Bronx	Crotona - Tremont	369.02	2,074	2,038	98.26	2,074	1,433	69.09	Yes	5,900 (98)	40 (97)	0.6 (98)	1.152 (98)	9.12 (64)	3	14.5 (99)	4.3 (9)	17.7 (94)	36.2 (73)	20.2 (94)	3
36005037000	New York	Bronx	Northeast Bronx	370	2,416	2,378	98.43	2,416	1,030	42.63	Yes	240 (47)	40 (97)	0.5 (95)	0.967 (97)	9.05 (62)	3	13.8 (98)	5.9 (33)	16 (90)	39.8 (86)	15.1 (63)	2
36005037100	New York	Bronx	Crotona - Tremont	371	4,226	4,172	98.72	4,220	2,685	63.63	Yes	1,300 (86)	40 (97)	0.6 (98)	1.137 (98)	9.11 (64)	3	12.9 (95)	5.6 (27)	18.5 (95)	37.7 (79)	16.3 (74)	2
36005037200	New York	Bronx	Fordham - Bronx Park	372	2,132	2,114	99.16	2,130	784	36.81	Yes	180 (40)	40 (97)	0.5 (95)	0.969 (97)	9.07 (63)	3	12.3 (92)	5.2 (21)	13.5 (77)	35.5 (70)	13.8 (48)	1
36005037300	New York	Bronx	Crotona - Tremont	373	6,373	6,321	99.18	6,339	3,493	55.1	Yes	700 (75)	40 (97)	0.6 (98)	1.142 (98)	9.12 (64)	3	12.9 (95)	4.4 (10)	16.2 (90)	33.7 (61)	17.8 (85)	2
36005037400	New York	Bronx	Fordham - Bronx Park	374	3,861	3,787	98.08	3,847	2,213	57.53	Yes	1,200 (85)	40 (97)	0.5 (95)	0.973 (97)	9.09 (63)	3	13.9 (98)	5.7 (29)	18.7 (96)	40.4 (87)	16.9 (79)	2
36005037504	New York	Bronx	Crotona - Tremont	375.04	3,323	3,232	97.26	3,103	2,361	76.09	Yes	540 (68)	40 (97)	0.6 (98)	1.144 (98)	9.13 (64)	3	13.5 (97)	5 (18)	19.7 (97)	37.4 (78)	18.9 (90)	3
36005037600	New York	Bronx	Fordham - Bronx Park	376	2,197	1,980	90.12	2,168	748	34.5	Yes	1,900 (91)	40 (97)	0.5 (95)	0.977 (97)	9.1 (63)	3	12.3 (92)	4.8 (15)	13.3 (76)	33.1 (57)	14 (50)	1
36005037800	New York	Bronx	Fordham - Bronx Park	378	2,900	2,870	98.97	2,882	1,131	39.24	Yes	3,100 (95)	40 (97)	0.5 (95)	0.967 (97)	9.09 (63)	3	13.5 (97)	4.8 (15)	15.1 (86)	36 (72)	16.4 (75)	1
36005037900	New York	Bronx	Crotona - Tremont	379	5,469	5,453	99.71	5,354	3,613	67.48	Yes	1,000 (83)	40 (97)	0.6 (98)	1.18 (98)	9.15 (65)	3	14.8 (99)	4.1 (7)	18 (94)	36.8 (76)	20.7 (96)	3
36005038000	New York	Bronx	Fordham - Bronx Park	380	5,239	5,031	96.03	5,191	2,952	56.87	Yes	490 (66)	40 (97)	0.5 (95)	0.966 (97)	9.07 (63)	3	14.4 (98)	6.6 (47)	21.1 (98)	45 (94)	16.7 (77)	3
36005038100	New York	Bronx	Crotona - Tremont	381	7,647	7,621	99.66	7,647	4,460	58.32	Yes	1,100 (83)	40 (97)	0.6 (98)	1.204 (98)	9.15 (65)	3	12.1 (91)	4.3 (9)	15.4 (88)	31.8 (49)	16.6 (77)	1
36005038200	New York	Bronx	Northeast Bronx	382	3,100	3,051	98.42	3,085	1,438	46.61	Yes	150 (35)	40 (97)	0.5 (95)	0.946 (97)	9.03 (62)	3	13.7 (97)	5.1 (19)	15 (86)	38.2 (81)	15.3 (65)	1
36005038301	New York	Bronx	Fordham - Bronx Park	383.01	5,084	5,013	98.6	5,057	2,885	57.05	Yes	790 (77)	40 (97)	0.5 (95)	1.178 (98)	9.15 (65)	3	12.1 (91)	4 (6)	13.7 (79)	32 (51)	16.4 (75)	1



## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

FIPS	State	County	Place Name	Tract	Total Population	Total Minority	% Minority	Total Population for Whom Poverty Status is Determined	Individuals Living in Poverty	% Poverty	Identified Environmental Justice Tract (Yes or No)	Traffic Proximity And Volume [Daily vehicles/ meters (Percentile)]	Pollutant Burdens					Chronic Disease Burdens						
													Air Toxics Cancer Risk [Lifetime risk per million (Percentile)]	Air Toxics Respiratory Hazard Index [Ratio of exposure to health-based reference concentration (Percentile)]	Diesel Particulate Matter [µg/m3 (Percentile)]	Particulate Matter 2.5 [µg/m3 (Percentile)]	Number of Pollutant Burdens at/above 90th Percentile	Asthma [% adults (Percentile rank)]	Cancer [% adults (Percentage rank)]	Diabetes [% adults (Percentile rank)]	High Blood Pressures [% adults (Percentile rank)]	Poor Mental Health [% adults (Percentage rank)]	Number of Chronic Disease Burdens above 90th Percentile	
36005038302	New York	Bronx	Fordham - Bronx Park	383.02	6,032	5,999	99.45	6,008	4,696	78.16	Yes	720 (75)	40 (97)	0.6 (98)	1.151 (98)	9.14 (65)	3	14.7 (99)	4.1 (7)	18.2 (95)	36.1 (73)	21.1 (96)	3	
36005038500	New York	Bronx	Fordham - Bronx Park	385	4,766	4,738	99.41	4,760	3,439	72.25	Yes	490 (66)	40 (97)	0.6 (98)	1.135 (98)	9.13 (64)	3	13.4 (97)	4.1 (7)	17.1 (93)	33.5 (59)	19.9 (94)	3	
36005038600	New York	Bronx	Northeast Bronx	386	8,889	8,886	99.97	8,872	3,953	44.56	Yes	500 (66)	40 (97)	0.5 (95)	0.934 (97)	9 (61)	3	13.4 (97)	5 (18)	13.9 (80)	36.9 (76)	14.8 (59)	1	
36005038700	New York	Bronx	Fordham - Bronx Park	387	3,823	3,242	84.8	3,798	2,545	67.01	Yes	720 (75)	40 (97)	0.5 (95)	1.13 (98)	9.13 (64)	3	12.4 (93)	4 (6)	13.1 (74)	30.6 (42)	17.9 (85)	1	
36005038800	New York	Bronx	Northeast Bronx	388	2,763	2,714	98.23	2,763	930	33.66	Yes	79 (24)	40 (97)	0.5 (95)	0.942 (97)	9.03 (62)	3	13.4 (97)	5.6 (27)	15 (86)	39.6 (85)	14.2 (53)	1	
36005038900	New York	Bronx	Fordham - Bronx Park	389	5,521	4,239	76.78	5,431	3,547	65.31	Yes	1,300 (87)	40 (97)	0.6 (98)	1.121 (98)	9.11 (64)	3	12.1 (91)	3.6 (3)	11.2 (56)	26.6 (20)	18.4 (88)	1	
36005039000	New York	Bronx	Fordham - Bronx Park	390	2,861	2,792	97.59	2,861	1,303	45.54	Yes	190 (41)	40 (97)	0.5 (95)	0.953 (97)	9.06 (62)	3	13.6 (97)	4.6 (12)	13.7 (79)	36.9 (76)	15.7 (69)	1	
36005039100	New York	Bronx	Fordham - Bronx Park	391	7,544	7,007	92.88	7,544	5,294	70.18	Yes	440 (63)	40 (97)	0.5 (95)	1.13 (98)	9.12 (64)	3	11.9 (90)	4.3 (9)	13.9 (80)	30.1 (39)	17.6 (84)	1	
36005039200	New York	Bronx	Fordham - Bronx Park	392	1,602	1,582	98.75	1,602	432	26.97	Yes	2,000 (92)	40 (97)	0.5 (95)	0.953 (97)	9.07 (63)	3	12.5 (93)	4.6 (12)	12.5 (69)	35.5 (70)	14.2 (53)	1	
36005039300	New York	Bronx	Crotona - Tremont	393	8,330	8,029	96.39	8,316	5,534	66.55	Yes	710 (75)	40 (97)	0.5 (95)	1.122 (98)	9.1 (63)	3	13.6 (97)	4.9 (16)	17.8 (94)	36.6 (75)	19.1 (91)	3	
36005039400	New York	Bronx	Northeast Bronx	394	5,647	5,586	98.92	5,421	2,684	49.51	Yes	1,800 (91)	40 (97)	0.5 (95)	0.949 (97)	9.05 (62)	3	13.8 (98)	5.6 (27)	17.9 (94)	41.5 (89)	16.5 (76)	2	
36005039500	New York	Bronx	Crotona - Tremont	395	4,257	4,226	99.27	4,211	2,591	61.53	Yes	1,700 (90)	40 (97)	0.6 (98)	1.163 (98)	9.14 (65)	3	12.9 (95)	4.5 (11)	16.4 (91)	34.5 (65)	17.3 (82)	2	
36005039600	New York	Bronx	Fordham - Bronx Park	396	5,022	4,981	99.18	5,015	2,604	51.92	Yes	310 (54)	40 (97)	0.5 (95)	0.941 (97)	9.04 (62)	3	14.2 (98)	5.5 (26)	15.6 (88)	40 (86)	16.1 (72)	1	
36005039700	New York	Bronx	Fordham - Bronx Park	397	3,744	1,617	43.19	1,109	501	45.18	Yes	1,200 (85)	40 (97)	0.6 (98)	1.08 (98)	9.12 (64)	3	12.3 (92)	2.4 (1)	5.9 (4)	16.1 (1)	18.9 (90)	2	
36005039800	New York	Bronx	Northeast Bronx	398	3,842	3,831	99.71	3,816	742	19.44	Yes	290 (51)	40 (97)	0.5 (95)	0.938 (97)	9.01 (61)	3	12.7 (94)	5.4 (24)	12.5 (69)	38.3 (81)	12.5 (33)	1	
36005039901	New York	Bronx	Fordham - Bronx Park	399.01	5,618	5,457	97.13	5,564	3,962	71.21	Yes	2,300 (93)	40 (97)	0.5 (95)	1.094 (98)	9.14 (65)	3	12.8 (95)	4 (6)	16.7 (92)	32.5 (54)	18.9 (90)	3	
36005039902	New York	Bronx	Fordham - Bronx Park	399.02	5,646	5,432	96.21	5,646	3,788	67.09	Yes	1,900 (91)	40 (97)	0.6 (98)	1.137 (98)	9.14 (65)	3	12.6 (94)	4 (6)	16.5 (91)	33.3 (58)	18.2 (87)	2	
36005040100	New York	Bronx	Fordham - Bronx Park	401	4,478	4,390	98.03	4,467	3,012	67.43	Yes	2,300 (93)	40 (97)	0.5 (95)	1.107 (98)	9.16 (65)	3	12.1 (91)	4.1 (7)	15.4 (88)	32.5 (54)	17.5 (83)	1	
36005040302	New York	Bronx	Fordham - Bronx Park	403.02	4,192	4,115	98.16	4,181	2,442	58.41	Yes	1,500 (88)	40 (97)	0.5 (95)	1.029 (97)	9.14 (65)	3	11.8 (89)	4.1 (7)	15.7 (89)	30.9 (44)	17.2 (81)	0	
36005040303	New York	Bronx	Fordham - Bronx Park	403.03	4,900	4,850	98.98	4,872	2,860	58.7	Yes	930 (81)	40 (97)	0.5 (95)	1.012 (97)	9.14 (65)	3	11.5 (86)	4.2 (8)	14.8 (85)	30.6 (42)	15.9 (71)	0	
36005040304	New York	Bronx	Fordham - Bronx Park	403.04	3,593	3,556	98.97	3,570	2,237	62.66	Yes	1,200 (86)	40 (97)	0.5 (95)	1.036 (97)	9.15 (65)	3	11.7 (88)	4 (6)	15 (86)	32.4 (53)	16.7 (77)	0	
36005040400	New York	Bronx	Northeast Bronx	404	3,600	3,567	99.08	3,600	516	14.33	Yes	250 (48)	40 (97)	0.5 (95)	0.929 (97)	9 (61)	3	12.9 (95)	5.7 (29)	13.5 (77)	38.7 (82)	12.8 (36)	1	
36005040501	New York	Bronx	Fordham - Bronx Park	405.01	4,399	4,311	98	4,368	2,663	60.97	Yes	1,200 (85)	40 (97)	0.5 (95)	1.037 (97)	9.14 (65)	3	11.7 (88)	3.9 (5)	13.7 (79)	29.9 (38)	16.2 (73)	0	
36005040502	New York	Bronx	Fordham - Bronx Park	405.02	7,264	7,177	98.8	7,250	4,372	60.3	Yes	1,100 (83)	40 (97)	0.5 (95)	1.044 (97)	9.14 (65)	3	12.1 (91)	4.1 (7)	14.6 (84)	31.6 (48)	16.4 (75)	1	
36005040600	New York	Bronx	Northeast Bronx	406	3,547	3,545	99.94	3,543	1,337	37.74	Yes	240 (46)	40 (97)	0.5 (95)	0.933 (97)	9.03 (62)	3	14.2 (98)	5.1 (19)	15.2 (87)	38 (80)	16.2 (73)	1	

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

36005040701	New York	Bronx	Fordham - Bronx Park	407.01	3,120	3,016	96.67	3,120	1,580	50.64	Yes	1,600 (89)	40 (97)	0.5 (95)	1.008 (97)	9.14 (65)	3	11.5 (86)	4.1 (7)	13.6 (78)	29.2 (34)	16.1 (72)	0
36005040702	New York	Bronx	Fordham - Bronx Park	407.02	7,023	6,672	95	7,016	3,625	51.67	Yes	1,400 (88)	40 (97)	0.5 (95)	1.018 (97)	9.13 (64)	3	11.6 (87)	4.5 (11)	14 (81)	31.3 (46)	16 (71)	0
36005040800	New York	Bronx	Northeast Bronx	408	4,826	4,365	90.45	4,811	2,438	50.68	Yes	1,800 (90)	40 (97)	0.5 (95)	0.934 (97)	9.04 (62)	3	13 (95)	4.5 (11)	13.8 (79)	33.6 (60)	16.1 (72)	1
36005040900	New York	Bronx	Fordham - Bronx Park	409	3,194	2,538	79.46	3,185	1,094	34.35	Yes	990 (82)	40 (97)	0.5 (95)	0.974 (97)	9.14 (65)	3	12.3 (92)	6.9 (54)	15.3 (87)	40 (86)	13.1 (40)	1
36005041100	New York	Bronx	Fordham - Bronx Park	411	3,510	3,173	90.4	3,483	1,734	49.78	Yes	1,800 (91)	40 (97)	0.5 (95)	0.999 (97)	9.13 (64)	3	11.2 (82)	4.6 (12)	13.2 (75)	30.8 (43)	15.1 (63)	0
36005041300	New York	Bronx	Fordham - Bronx Park	413	8,677	8,020	92.43	8,574	3,509	40.93	Yes	1,900 (91)	40 (97)	0.5 (95)	0.999 (97)	9.13 (64)	3	10.6 (72)	4.5 (11)	11.7 (62)	28.1 (27)	13.7 (47)	0
36005041400	New York	Bronx	Northeast Bronx	414	5,158	4,989	96.72	5,131	1,892	36.87	Yes	720 (75)	40 (97)	0.5 (95)	0.859 (97)	8.97 (60)	3	13.2 (96)	5 (18)	13.8 (79)	35.5 (70)	15.3 (65)	1
36005041500	New York	Bronx	Fordham - Bronx Park	415	6,367	5,869	92.18	6,308	3,361	53.28	Yes	1,400 (88)	40 (97)	0.5 (95)	1.009 (97)	9.12 (64)	3	10.8 (76)	4.5 (11)	12 (65)	28.4 (29)	13.9 (49)	0
36005041800	New York	Bronx	Northeast Bronx	418	3,876	3,777	97.45	3,804	1,618	42.53	Yes	2,100 (92)	40 (97)	0.5 (95)	0.883 (97)	9.01 (61)	3	13.4 (97)	4.7 (14)	14.1 (81)	35.4 (70)	16.3 (74)	1
36005041900	New York	Bronx	Fordham - Bronx Park	419	6,035	5,410	89.64	5,993	3,431	57.25	Yes	1,100 (84)	40 (97)	0.5 (95)	0.979 (97)	9.12 (64)	3	11.1 (81)	4.3 (9)	13.1 (74)	30.2 (40)	14.8 (59)	0
36005042000	New York	Bronx	Northeast Bronx	420	4,206	4,071	96.79	4,121	2,158	52.37	Yes	3,000 (95)	40 (97)	0.5 (95)	0.916 (97)	9.02 (61)	3	13.3 (96)	5.3 (22)	16 (90)	37 (77)	16.4 (75)	2
36005042100	New York	Bronx	Fordham - Bronx Park	421	5,661	5,176	91.43	5,648	3,391	60.04	Yes	1,100 (84)	40 (97)	0.5 (95)	0.971 (97)	9.11 (64)	3	11.3 (84)	4.3 (9)	13 (74)	30.6 (42)	15 (62)	0
36005042200	New York	Bronx	Northeast Bronx	422	3,285	3,176	96.68	3,285	964	29.35	Yes	770 (77)	40 (97)	0.5 (95)	0.918 (97)	9.01 (61)	3	12.9 (95)	5.7 (29)	13.8 (79)	37.5 (78)	13.6 (46)	1
36005042300	New York	Bronx	Fordham - Bronx Park	423	4,313	3,705	85.9	4,313	2,048	47.48	Yes	810 (78)	40 (97)	0.5 (95)	0.979 (97)	9.11 (64)	3	10.8 (76)	4.3 (9)	11.9 (64)	29 (33)	14.5 (56)	0
36005042400	New York	Bronx	Northeast Bronx	424	2,569	2,484	96.69	2,322	467	20.11	Yes	670 (74)	40 (97)	0.5 (95)	0.918 (97)	8.99 (61)	3	12.6 (94)	7 (56)	15.9 (89)	42.6 (91)	12.4 (32)	2
36005042500	New York	Bronx	Fordham - Bronx Park	425	6,175	5,415	87.69	6,173	3,646	59.06	Yes	1,400 (88)	40 (97)	0.5 (95)	0.992 (97)	9.11 (64)	3	10.9 (77)	4 (6)	12.6 (70)	29.6 (36)	15.3 (65)	0
36005042600	New York	Bronx	Northeast Bronx	426	6,729	6,312	93.8	6,627	1,770	26.71	Yes	580 (70)	40 (97)	0.5 (95)	0.89 (97)	8.95 (60)	3	12.5 (93)	6 (35)	13.6 (78)	38.9 (83)	12.3 (30)	1
36005042800	New York	Bronx	Northeast Bronx	428	2,120	2,065	97.41	2,120	566	26.7	Yes	410 (61)	40 (97)	0.5 (95)	0.876 (97)	8.96 (60)	3	12.4 (93)	6 (35)	13.2 (75)	38.5 (82)	11.9 (26)	1
36005042901	New York	Bronx	Fordham - Bronx Park	429.01	3,561	3,271	91.86	3,554	2,045	57.54	Yes	1,300 (87)	40 (97)	0.5 (95)	0.981 (97)	9.1 (64)	3	11.6 (87)	4.1 (7)	14.5 (84)	30.2 (40)	16.7 (77)	0
36005042902	New York	Bronx	Fordham - Bronx Park	429.02	4,041	3,843	95.1	3,929	2,071	52.71	Yes	1,600 (89)	40 (97)	0.5 (95)	0.974 (97)	9.11 (64)	3	12.2 (92)	4.5 (11)	14.4 (83)	33 (57)	16.5 (76)	1
36005043000	New York	Bronx	Northeast Bronx	430	3,499	3,439	98.29	3,499	1,298	37.1	Yes	710 (75)	40 (97)	0.5 (95)	0.892 (97)	8.99 (61)	3	13.4 (97)	5.9 (33)	15.4 (88)	39.4 (84)	14.5 (56)	1
36005043100	New York	Bronx	Fordham - Bronx Park	431	10,246	9,656	94.24	9,814	5,699	58.07	Yes	1,200 (85)	40 (97)	0.5 (95)	0.967 (97)	9.11 (64)	3	12.1 (91)	4.9 (16)	16.5 (91)	34.9 (67)	16.4 (75)	2
36005043400	New York	Bronx	Northeast Bronx	434	3,710	3,592	96.82	3,710	1,395	37.6	Yes	620 (72)	40 (97)	0.5 (95)	0.879 (97)	8.98 (60)	3	13.5 (97)	5.2 (21)	14.8 (85)	37 (77)	15.6 (68)	1
36005043500	New York	Bronx	Kingsbridge-Riverdale	435	499	483	96.79	499	302	60.52	Yes	2,200 (93)	40 (97)	0.5 (95)	0.953 (97)	9.08 (63)	3						
36005043600	New York	Bronx	Northeast Bronx	436	2,020	1,884	93.27	2,020	445	22.03	Yes	320 (54)	40 (97)	0.5 (95)	0.87 (97)	8.98 (60)	3	11.9 (90)	5.5 (26)	12 (65)	34.3 (64)	12 (27)	1
36005044200	New York	Bronx	Northeast Bronx	442	4,019	4,007	99.7	4,009	1,379	34.4	Yes	360 (57)	40 (97)	0.5 (95)	0.85 (97)	8.94 (59)	3	13.3 (96)	5.2 (21)	15 (86)	39.3 (84)	14.9 (61)	1
36005044400	New York	Bronx	Northeast Bronx	444	4,295	4,173	97.16	4,278	1,208	28.24	Yes	350 (56)	40 (97)	0.5 (95)	0.859 (97)	8.94 (59)	3	12.5 (93)	6.1 (37)	14.2 (82)	39.4 (84)	12.6 (34)	1
36005044800	New York	Bronx	Northeast Bronx	448	2,075	2,013	97.01	2,067	421	20.37	Yes	190 (41)	40 (97)	0.5 (95)	0.867 (97)	8.94 (59)	3	12.7 (94)	5.9 (33)	14.5 (84)	39.8 (86)	13 (39)	1
36005044902	New York	Bronx	Northeast Bronx	449.02	2,041	588	28.81	2,026	603	29.76	Yes	400 (60)	40 (97)	0.5 (95)	0.896 (97)	9.03 (62)	3	10.3 (65)	6.9 (54)	8.4 (21)	27.5 (24)	12.6 (34)	0
36005045600	New York	Bronx	Northeast Bronx	456	3,220	2,773	86.12	3,195	776	24.29	Yes	1,300 (87)	40 (97)	0.5 (95)	0.85 (97)	8.85 (57)	3	12 (90)	6.1 (37)	12.5 (69)	36.3 (74)	12.5 (33)	1

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix C)

FIPS	State	County	Place Name	Tract	Total Population	Total Minority	% Minority	Total Population for Whom Poverty Status is Determined	Individuals Living in Poverty	% Poverty	Identified Environmental Justice Tract (Yes or No)	Traffic Proximity And Volume [Daily vehicles/ meters (Percentile)]	Pollutant Burdens					Chronic Disease Burdens						
													Air Toxics Cancer Risk [Lifetime risk per million (Percentile)]	Air Toxics Respiratory Hazard Index [Ratio of exposure to health-based reference concentration (Percentile)]	Diesel Particulate Matter [µg/m3 (Percentile)]	Particulate Matter 2.5 [µg/m3 (Percentile)]	Number of Pollutant Burdens at/above 90th Percentile	Asthma [% adults (Percentile rank)]	Cancer [% adults (Percentage rank)]	Diabetes [% adults (Percentile rank)]	High Blood Pressures [% adults (Percentile rank)]	Poor Mental Health [% adults (Percentage rank)]	Number of Chronic Disease Burdens above 90th Percentile	
36005045800	New York	Bronx	Northeast Bronx	458	5,744	5,720	99.58	5,644	4,541	80.46	Yes	400 (60)	40 (97)	0.5 (95)	0.921 (97)	8.97 (60)	3	14.9 (99)	4.7 (14)	18.7 (96)	37.6 (79)	20.1 (94)	3	
36005046000	New York	Bronx	Northeast Bronx	460	3,246	3,135	96.58	3,006	1,246	41.45	Yes	640 (73)	40 (97)	0.5 (95)	0.924 (97)	8.97 (60)	3	14.4 (98)	6.1 (37)	19.2 (96)	43.4 (93)	16.7 (77)	3	
36005046201	New York	Bronx	Northeast Bronx	462.01	28,109	26,126	92.95	26,914	6,894	25.61	Yes	1,700 (90)	40 (97)	0.5 (95)	0.899 (97)	8.9 (58)	3	11.8 (89)	8 (80)	16.4 (91)	44 (93)	11.4 (21)	2	
36005046202	New York	Bronx	Northeast Bronx	462.02	9,912	9,798	98.85	9,124	3,890	42.63	Yes	2,300 (93)	40 (97)	0.5 (95)	0.909 (97)	8.93 (59)	3	12.9 (95)	6.4 (43)	16.2 (90)	41.6 (89)	14.1 (52)	2	
36005048400	New York	Bronx	Northeast Bronx	484	4,277	4,175	97.62	4,203	819	19.49	Yes	850 (79)	40 (97)	0.5 (95)	0.898 (97)	8.92 (59)	3	12.6 (94)	5.6 (27)	13.3 (76)	37.7 (79)	12.7 (35)	1	
36047000200	New York	Kings	Sunset Park	2	1,167	1,021	87.49	1,163	623	53.57	Yes	4,900 (98)	40 (97)	0.6 (98)	1.32 (98)	9 (61)	3	10.1 (60)	3.3 (2)	11.7 (62)	24.1 (10)	16.9 (79)	0	
36047001300	New York	Kings	Downtown - Heights - Slope	13	1,917	743	38.76	1,917	542	28.27	Yes	7,400 (99)	40 (97)	0.6 (98)	1.403 (99)	9.14 (65)	3	8.6 (18)	5.8 (31)	8.5 (22)	25.3 (14)	10.4 (11)	0	
36047001500	New York	Kings	Downtown - Heights - Slope	15	9,011	6,442	71.49	8,995	3,063	34.05	Yes	3,900 (97)	40 (97)	0.6 (98)	1.39 (99)	9.13 (64)	3	9.6 (46)	4 (6)	7.2 (10)	21.4 (5)	11.6 (23)	0	
36047001800	New York	Kings	Sunset Park	18	1,897	1,572	82.87	0	0	0	Yes	3,100 (95)	40 (97)	0.6 (98)	1.461 (99)	9.01 (61)	3	7.9 (6)	2.5 (1)	8 (16)	22.1 (6)	13.2 (41)	0	
36047002000	New York	Kings	Sunset Park	20	1,412	1,385	98.09	1,412	921	65.23	Yes	4,900 (98)	40 (97)	0.6 (98)	1.273 (98)	8.98 (60)	3	9.6 (46)	3.6 (3)	10.9 (52)	21.4 (5)	15 (62)	0	
36047002200	New York	Kings	Sunset Park	22	4,698	3,857	82.1	4,504	2,255	50.07	Yes	4,100 (97)	40 (97)	0.5 (95)	1.225 (98)	8.97 (60)	3	9.3 (37)	5.7 (29)	13.6 (78)	29.7 (37)	13.6 (46)	0	
36047002300	New York	Kings	Downtown - Heights - Slope	23	4,219	4,187	99.24	4,145	3,189	76.94	Yes	5,500 (98)	40 (97)	0.6 (98)	1.391 (99)	9.15 (65)	3	13.2 (96)	4.9 (16)	19.1 (96)	36.9 (76)	18.9 (90)	3	
36047002901	New York	Kings	Downtown - Heights - Slope	29.01	4,447	4,340	97.59	4,386	2,992	68.22	Yes	3,800 (97)	40 (97)	0.6 (98)	1.373 (99)	9.12 (64)	3	13.8 (98)	5.1 (19)	18.3 (95)	37.5 (78)	19.4 (92)	3	
36047003100	New York	Kings	Downtown - Heights - Slope	31	3,259	1,924	59.04	2,350	209	8.89	Yes	1,700 (90)	40 (97)	0.6 (98)	1.372 (99)	9.12 (64)	3	9.3 (37)	6.8 (52)	9.2 (31)	27.7 (25)	9.4 (5)	0	
36047003300	New York	Kings	Downtown - Heights - Slope	33	4,202	2,342	55.74	4,190	643	15.35	Yes	1,400 (88)	40 (97)	0.6 (98)	1.37 (99)	9.11 (64)	3	8.2 (10)	3.9 (5)	4.8 (2)	17.3 (2)	9.3 (5)	0	
36047003500	New York	Kings	Downtown - Heights - Slope	35	1,907	1,017	53.33	1,904	405	21.27	Yes	1,900 (91)	40 (97)	0.6 (98)	1.364 (99)	9.1 (63)	3	9.3 (37)	4.8 (15)	7.2 (10)	22.5 (7)	10.2 (10)	0	
36047005201	New York	Kings	Bensonhurst - Bay Ridge	52.01	1,707	599	35.09	1,707	606	35.5	Yes	1,100 (84)	30 (83)	0.4 (81)	0.921 (97)	8.86 (57)	1	9.4 (40)	12.8 (99)	14.7 (85)	39.2 (84)	9.7 (7)	1	
36047006600	New York	Kings	Bensonhurst - Bay Ridge	66	3,542	1,253	35.38	3,541	1,148	32.42	Yes	510 (67)	30 (83)	0.5 (95)	1.135 (98)	8.9 (58)	2	9 (28)	5.8 (31)	7.6 (13)	21.6 (5)	11.5 (22)	0	
36047006800	New York	Kings	Bensonhurst - Bay Ridge	68	4,900	2,880	58.78	4,848	2,209	45.57	Yes	1,100 (84)	40 (97)	0.5 (95)	1.177 (98)	8.91 (58)	3	9.9 (54)	5.2 (21)	10.6 (49)	24.7 (12)	14.6 (57)	0	
36047007100	New York	Kings	Downtown - Heights - Slope	71	5,050	4,143	82.04	5,044	2,482	49.21	Yes	220 (45)	40 (97)	0.6 (98)	1.396 (99)	9.1 (63)	3	11.5 (86)	5.5 (26)	13.9 (80)	30.6 (42)	15 (62)	0	
36047007200	New York	Kings	Sunset Park	72	1,900	1,746	91.89	1,900	1,098	57.79	Yes	6,700 (99)	40 (97)	0.6 (98)	1.235 (98)	8.94 (59)	3	9.2 (34)	3.7 (4)	12 (65)	25.5 (15)	14.7 (58)	0	



## Appendix D: Census Tracts in Environmental Justice Communities Identified for Place-Based Mitigation (Tolling Scenario E)

If the Project receives Federal approval, the Project Sponsors will implement mitigation measures to address adverse effects to communities that are already overburdened by pre-existing air pollution and chronic diseases. Regional mitigation measures will be implemented as described regardless of the eventual toll structure. Once the final toll structure is adopted, the census tracts below that are projected to have increases in truck traffic will benefit from place-based mitigation measures sited according to the process described in **Chapter 17, “Environmental Justice.”**

**Table 1**, below, details the census tracts identified in **Section 17D-7.2.2, Table 17D-15, “Daily Truck Volume in Tolling Scenario E Compared to No Action in Overburdened Communities.”** These tracts represent environmental-justice-designated communities where individuals experience at least one pre-existing pollutant burden and at least one pre-existing chronic disease burden at or above the 90th percentile, nationally, and where truck proximity could increase as a result of the Project under Tolling Scenario E.

**Table 1. Communities Identified for Place-Based Mitigation (Tolling Scenario E)**

County	Community*	Census Tract
Bronx, NY	Crotona–Tremont	157
		165
		215.02
		217
		218
		227.01
		229.01
		229.02
		231
		359
		365.02
		367
		369.01
		369.02
	High Bridge–Morrisania	209
		213.01
		213.02
		227.02
	Hunts Point–Mott Haven	23
		25
		27.01
		83
		85
		89
		115.02
		119

## Appendix 17D: Technical Memorandum –

Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens (Appendix D)

County	Community*	Census Tract
		121.01
		121.02
	Northeast Bronx	462.02
	Pelham–Throgs Neck	28
		40.01
		42
		44
		46
		50.01
		76
		144
		162
New York, NY	East Harlem	192
		194
	Randall's Island**	240
Kings, NY	Downtown Brooklyn–Fort Greene***	23
		29.01
		185.01
	South Williamsburg†	533
		535
		537
		539
Essex, NJ	City of Orange	184
	East Orange	113
	Newark	9
		10
		16
		229
Bergen, NJ	Fort Lee	192.03

\* The “Community” column identifies municipalities or, in New York City, neighborhoods. The New York City neighborhood names are the UHF names for the area and encompass multiple portions of the city that may be considered separate neighborhoods. Refer to NYC Environment and Health Data Portal for more information on UHF geographies. <https://a816-dohbesp.nyc.gov/IndicatorPublic/beta/data-stories/geographies/>

\*\* Part of the East Harlem UHF neighborhood, but labeled as “Randall’s Island” to further specify location

\*\*\* Part of the Downtown–Heights–Slope UHF neighborhood, but labelled “Downtown Brooklyn–Fort Greene” to further specify location.

† Part of the Greenpoint UHF neighborhood, but labeled as “South Williamsburg” to further specify location.

†† Census Tract 3009, Nassau County not shown; Closer examination indicates that this tract is shown with a potential increase in truck traffic proximity under Tolling Scenario E; though roadways passing through the tract have the potential to see decreases in truck traffic, the center of its population is near a roadway where modeling indicates that truck traffic could increase.

CENTRAL BUSINESS DISTRICT (CBD) TOLLING PROGRAM

*[Appendix 17E:  
Approach to Mitigating the Effect of CBD  
Tolls on Low-Income Frequent Drivers]*

2023





# Contents

17E-1.	Introduction .....	17E-1
17E-2.	Eliminating Barriers to E-ZPass .....	17E-1
17E-3.	Background on the New LIDP .....	17E-2
17E-4.	Why the Features of the LIDP Were Included .....	17E-2
17E-5.	Benefit to Low-Income Drivers.....	17E-3
17E-6.	Calculations for Income-Based Discount Program .....	17E-4
17E-6.1	DISPLACED REVENUE .....	17E-4
17E-6.2	EFFECTIVE TOLL RATE .....	17E-4

# Attachment

Identifying Low-Income Auto Commuters to the Manhattan CBD





## 17E-1. Introduction

In the Environmental Assessment (EA), the Triborough Bridge and Tunnel Authority (TBTA) committed to a number of mitigation measures to address a potential adverse effect on low-income frequent drivers. These measures include:

- An annual tax credit for Central Business District (CBD) tolls paid by residents of the Manhattan CBD whose New York adjusted gross income for the taxable year is less than \$60,000
- Coordination with the New York State Department of Taxation and Finance (NYS DTF) to ensure availability of documentation and assistance needed for drivers eligible for the New York State tax credit<sup>1</sup>
- Posting of information related to the tax credit on the Project website, with a link to the appropriate location on the NYS DTF website to guide eligible drivers to information on claiming the credit
- Elimination of the \$10 E-ZPass tag deposit fee for customers without credit card backup
- Enhanced promotion of existing E-ZPass payment and plan options, including the pay-per-trip plan which is especially helpful for those on tight budgets
- Outreach and education on eligibility for existing discounted transit fare products and programs, including those for individuals 65 years of age and older, those with disabilities, and those with low incomes, about which many may not be aware
- Establishment of an Environmental Justice Community Group

## 17E-2. Eliminating Barriers to E-ZPass

There are two fundamental barriers for low-income drivers who want to use E-ZPass: (1) the \$10 tag deposit fee for those who do not have a credit card linked to their account, which is often the case for low-income customers; and, (2) the need to pre-fund the account, which is difficult to do for those on tight budgets. Not being able to use E-ZPass leads to higher toll rates; in the New York region, these rates can be significantly higher, depending upon the facility traveled and time of day.<sup>2</sup>

In the EA, TBTA committed to eliminating the tag fee barrier and to doing further outreach and education on its pay-per-trip plan, which is already in place and allows drivers to pay as they go, rather than maintaining a pre-funded account. Together, these policies will reduce the initial cost of opening an E-ZPass account from up to \$35 down to \$0. As an added benefit, eliminating these barriers to E-ZPass would allow

---

<sup>1</sup> Although some people might not earn enough annually to have to file a tax return, they may still opt to submit a tax return to claim the credit. Free tax filing programs are available for qualifying individuals through the New York State Department of Taxation and Finance and the New York City Department of Consumer and Worker Protection.

<sup>2</sup> The increased cost of Tolls by Mail compared to E-ZPass varies by agency in the New York region. For example, Tolls by Mail tolls for passenger vehicles at the Port Authority of New York and New Jersey's facilities are up to 33 percent higher than E-ZPass, depending on the time of day; TBTA facilities charge up to 55 percent more for passenger vehicles at its major facilities; the difference is greater at the minor facilities.

low-income customers to pay lower tolls and be eligible for other types of discount programs at facilities in the New York metropolitan area where applicable.

### 17E-3. Background on the New LIDP

After public comment and further consideration and assessment, TBTA has also committed for the Final EA to implementing a Low-Income Discount Plan (LIDP) for those frequent drivers who have either a Federal adjusted gross income reported on their income tax return for the prior calendar year in the amount of no more than \$50,000 or proof of enrollment in a qualifying government-provided income-based program (such as the Supplemental Nutrition Assistance Program (SNAP) or the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and have no reasonable transit alternative to the Manhattan CBD.<sup>3</sup> The following paragraphs identify why this mitigation was included in the Final EA and describe the calculations related to the forgone revenue / cost of the LIDP.

Importantly, the team was cognizant of the need to consider mitigation in light of the purpose and need of the overall Project, which aims, among other objectives, to reduce vehicle volumes to, and vehicle miles-traveled within, the Manhattan CBD. Additionally, the team looked at national examples to seek precedent and ideas on effective ways to support low-income frequent drivers. Although there are few current examples, and none are fully analogous to the CBD Tolling Program, they did provide guidance. The Elizabeth River Crossing (ERC) in Virginia does not aim to reduce congestion, but to fund the facility; it provides a 50 percent discount on up to 10 trips per week but has geographical constraints for participation. Both the Los Angeles (LA) Metro and the Illinois Tollway reduce the barrier to obtaining transponders and accounts, but do not provide a discounted toll rate; instead, LA Metro provides a one-time \$25 credit and the Illinois Tollway provides a one-time \$20 credit. These plans also restrict their limited benefits to a driver's place of residence and are thus geographically constrained.

### 17E-4. Why the Features of the LIDP Were Included

As noted in the EA, TBTA will remove the current tag-deposit fee, eliminating a barrier to access E-ZPass and the different discounts beyond the CBD Tolling Program that it offers. In the Final EA, the addition of the LIDP will also offer an ongoing discount to frequent drivers after the first 10 trips each month. Importantly, the program is not geographically constrained given that there are low-income frequent drivers throughout the 28-county regional study area of the EA.

TBTA's program also has a primary goal of reducing congestion in addition to raising revenue dedicated to transit improvement. To achieve those goals, the discount must be sized appropriately. The program included in the Final EA will benefit individuals with household incomes of \$50,000 or less, in alignment with the other programs. To avoid incentivizing drivers, while still addressing the adverse effects on low-

---

<sup>3</sup> By accepting credentials from these other sources, some drivers who have higher incomes will also be allowed if they qualified with that income for these services. For those who do not qualify for these services and must submit tax documents, \$50,000 will be used, as it is roughly twice the Federal poverty rate and easy for customers to understand.

income frequent drivers, the LIDP will have drivers pay for the first 10 trips at the E-ZPass rate, followed by a 25 percent discount for additional trips.

A higher discount was studied—50 percent; however, such a deep discount led to an effective toll rate below round-trip transit fares. For example, under Tolling Scenario A, with the toll of \$9 for peak and \$7 off-peak,<sup>4</sup> a 50 percent reduction would result in a paid toll of less than the current round-trip transit fare of \$5.50. Even under the higher toll tolling scenarios, this discount rate would still incentivize low-income drivers to continue using their vehicles, even if transit is an option, for those who would be eligible for a crossing credit.

## 17E-5. Benefit to Low-Income Drivers

Through the features described above, the CBD Tolling Program LIDP will address the effect on low-income drivers, while being consistent with the goals of the Project and consistent with other examples from around the country. The elimination of the barriers to allow low-income drivers to more easily access E-ZPass accounts would reduce their toll cost by 33 percent across the modeled tolling scenarios, just by virtue of providing the ability to use E-ZPass instead of Tolls by Mail. **Further, by providing the additional 25 percent reduction after the first 10 trips each month, the combined effective discount rate would be 42 percent each month for the typical commuter entering the Manhattan CBD 20 days per month.**

---

<sup>4</sup> As described in the Final EA, simple figures were used; as noted and shown in Appendix 2 of the Final EA, the modeling used \$9.20 for the peak-period E-ZPass toll for passenger vehicles and \$6.90 for the off-peak.



## 17E-6. Calculations for Income-Based Discount Program

### 17E-6.1 DISPLACED REVENUE

Below is a simplified and conservative calculation illustrating a range for the displaced revenue. This analysis uses the peak rates in the tolling scenarios with the highest and lowest tolls.

ITEM	LOW	HIGH
	Scenario A	Scenarios E & F
Calculate Vehicles		
Low-Income Commuters into the CBD Daily	16,100	16,100
Low-Income Commuters in HOV Vehicles Daily	(2,310)	(2,310)
<b>Low-Income Vehicles Commuting into the CBD</b>	<b>13,790</b>	<b>13,790</b>
Peak Toll Rate	\$9.20	\$23.00
25% Discount	25%	25%
Discounted Trips (after full price trips)	10	10
Displaced Revenue per Month	\$23.00	\$57.50
<b>Convert to Annual (x 12 months)</b>	<b>\$276.00</b>	<b>\$690.00</b>
Low-Income Vehicles Commuting into the CBD	13,790	13,790
Convert to Annual (x 12 months)	\$276.00	\$690.00
<b>Displaced Annual Revenue</b>	<b>\$3.8 M</b>	<b>\$9.5 M</b>

### 17E-6.2 EFFECTIVE TOLL RATE

For illustrative purposes, below is the description for how the effective toll savings was calculated for Tolling Scenario A.

Beginning with the Tolls by Mail rate of \$13.80, a customer traveling 20 times per month during peak periods would pay \$276.00. That same customer now able to use E-ZPass and the LIDP would pay \$9.20 per trip for the first 10 trips (\$92.00), and \$6.90 for the remaining 10 trips that month (\$69.00), for a total of \$161.00. Thus, the effective discount would be 42 percent per month.

For those traveling more frequently, the effective discount would be higher. For example, a frequent driver traveling 6 days a week during peak periods in March 2023 (27 days) would save roughly 44 percent that month.

## ATTACHMENT TO APPENDIX 17E

### Identifying Low-Income Auto Commuters to the Manhattan CBD

Chapter 17, “Environmental Justice,” of the EA identifies a total of 16,100 low-income workers who drive to the Manhattan CBD for work, a group that represents approximately 7 percent of the 219,000 low-income workers who commute to the Manhattan CBD. These 16,100 workers may have alternative travel options, such as transit, but drive for a variety of possible reasons. The 16,100 figure includes both workers who drive alone and those who carpool or vanpool with others. Low-income commuters who drive to the Manhattan CBD are spread widely throughout the region, as seen in the table below.

To arrive at this figure, the Project Sponsors relied on data from the Census Transportation Planning Package (CTPP), 2012–2016 estimate. The Project Sponsors counted workers from these data as “low-income” if they had an annual household income of less than \$50,000. This is approximately equivalent to, although higher than, the low-income threshold of twice the Federal poverty threshold for a three-person family, which is the average household size for the Project study area. Because the CTPP does not provide data on low-income commuters’ travel modes to the Manhattan CBD along with their home locations, the Project Sponsors assessed home locations by correlating CTPP data describing home locations for low-income commuters to the Manhattan CBD; home locations for workers regardless of income who drive to the Manhattan CBD; and the mode of transportation for all workers regardless of income who commute to the Manhattan CBD.

## Appendix 17E: Approach to Mitigating the Effect of CBD Tolls on Low-Income Frequent Drivers

## Home Locations of Low-Income Workers Who Drive to the Manhattan CBD

STATE AND COUNTY	LOW-INCOME AUTO COMMUTERS	LOW-INCOME AUTO COMMUTERS (%)
<b>Connecticut</b>	<b>165</b>	<b>1.0%</b>
Fairfield County	127	0.8%
New Haven County	38	0.2%
<b>New Jersey</b>	<b>2,696</b>	<b>16.8%</b>
Bergen County	923	5.7%
Essex County	288	1.8%
Hudson County	621	3.9%
Hunterdon County	6	0.0%
Mercer County	0	0.0%
Middlesex County	273	1.7%
Monmouth County	137	0.9%
Morris County	45	0.3%
Ocean County	29	0.2%
Passaic County	149	0.9%
Somerset County	20	0.1%
Sussex County	5	0.0%
Union County	199	1.2%
Warren County	1	0.0%
<b>New York</b>	<b>13,210</b>	<b>82.2%</b>
New York City	<b>10,839</b>	<b>67.4%</b>
Bronx County	2,130	13.3%
Kings County	2,559	15.9%
New York County	1,817	11.3%
Queens County	3,823	23.8%
Richmond County	510	3.2%
Dutchess County	43	0.3%
Nassau County	720	4.5%
Orange County	255	1.6%
Putnam County	67	0.4%
Rockland County	144	0.9%
Suffolk County	410	2.6%
Westchester County	732	4.6%
<b>GRAND TOTAL</b>	<b>16,071</b>	<b>100.0%</b>

Source: Project Sponsor estimation based on U.S. Census Bureau, CTPP, 2012–2016 5-Year Estimate.

## Notes:

1. Figures do not add to 16,100 due to rounding when assessing home locations.
2. For the purposes of assessing home locations, all 16,100 low-income drivers to the Manhattan CBD were deemed to live in the 28-county region, though the Census data suggests that some small number of these (roughly 2%) may come from outside of the 28-county region.



## Philip D. Murphy, State of New Jersey Governor, September 9, 2022 (Submission 14254)



Philip D. Murphy  
Governor

September 8, 2022

The Honorable Pete Buttigieg  
Secretary, US Department of Transportation  
1200 New Jersey Ave SE  
Washington, DC 20590

Dear Secretary Buttigieg:

Thank you for your leadership of the US Department of Transportation's (USDOT) unprecedented infrastructure investment. The enactment of the Bipartisan Infrastructure Law (BIL) disproves longstanding assumptions about our country's ability to work together to deliver infrastructure projects. I am writing in the spirit of partnership as a follow-up to my visit to the USDOT on August 31. My team and I discussed the Metropolitan Transportation Authority's (MTA) Central Business District (CBD) Tolling Plan (the MTA's plan), among other topics, with Deputy Secretary Trottenberg. At that meeting, I requested an Environmental Impact Statement (EIS) be required to study the effects of the MTA's plan.

While we are conceptually open to traditional congestion pricing that makes traffic reduction its main goal, more time is needed to understand the MTA's plan, which asserts raising revenue as a primary goal — revenue that would only go to New York. Simply put, because neither New Jersey residents nor their government were meaningfully consulted in the development of the MTA's plan, the State of New Jersey need more time to review, analyze, and digest the impacts that the MTA's plan would have on New Jerseyans. Top of mind are equity and environmental justice, two priorities of the Biden Administration. Further, the MTA's plan would impact New Jersey's ability to sustain investment that would improve our transit capacity and, by extension, mitigate congestion.

The Environmental Assessment (EA) is long and complex: 4005 pages in total. Thirty days is insufficient for review and comment. Public hearings should have been held as part of the EA's development, not after the fact. Due to the lack of public outreach, few New Jerseyans had opportunity to comment on the EA. New Jersey residents have the distinction of being directly impacted by the MTA's plan without any representation in the New York State Legislature, the MTA Board, or the Traffic Mobility Review Board and will not receive any direct benefit from the revenue that the MTA will raise.

The MTA's plan presents equity and environmental justice concerns. The socioeconomic and demographic data on who currently drives into the Manhattan CBD is not available. Consider that many of these individuals cannot afford to live in Manhattan and must travel great lengths to reach their workplace. Some may work in professions that require off-shift travel when public transit service is reduced. It would be a mistake to assume, without data, that only the most privileged drive into New York. Moreover, four scenarios in the MTA's plan would charge a congestion fee on commuter buses; the commuter bus toll would ultimately be passed onto bus commuters, who tend to be less affluent than rail commuters. Increasing the cost of public transit has the opposite effect of congestion pricing's intent. Lastly, the MTA's plan does not clearly credit drivers who cross the George Washington Bridge and then go into the CBD. This would promote toll shopping at the crossings that receive a credit. This diversion would simply shift carbon emissions from affluent Tribeca and Times Square into North Jersey communities such as Union City, Jersey City, and Newark. One in four children in Newark has asthma, (three times the national rate; these communities are among the most overburdened in the state. The

Honorable Pete Buttigieg  
September 8, 2022  
Page 2

MTA's plan appears to be in direct contradiction to the President's Justice40 commitments. Transportation should be about enabling opportunity, not stifling it.

The MTA's plan may be premature considering current transportation investments kickstarted under your leadership. The Gateway Development Commission and its partners are working productively to deliver a new Hudson River Tunnel and an expanded Penn Station. Gateway alone would allow for at least 200,000 additional passenger trips. A new Port Authority Bus Terminal (PABT) would increase that number by more than 50,000. An increase of Trans-Hudson capacity by more than a quarter million daily transit trips likely makes exogenous congestion mitigation unnecessary. In 2019, when the New York State Legislature was contemplating congestion pricing, both projects lacked clarity on funding sources. Now, in 2022, with new leadership in Washington, these two projects are taking shape and should be prioritized over projects such as the MTA's plan, which is still developing scenarios.

The MTA's need to raise revenue in 2019 may now also be unnecessary due to the 2021 BIL. Through BIL, the State of New York is scheduled to receive over \$2 billion annually in Federal Transit Administration funding, including \$250 million more in Urbanized Area Formula Grants and \$400 million more in State of Good Repair Grants. The MTA now also raises \$400 million a year in revenue from a separate congestion charge on For-Hire Vehicles enacted in 2019. These enormous sums stand in contrast to the fact that the MTA is not contributing at all to the new PABT or to the Hudson Tunnel Project.

The stark irony of the MTA's plan is that it will enrich itself at the expense of two organizations that are not directly eligible for BIL formula funding, the NJ Turnpike Authority and the Port Authority of New York and New Jersey (PANYNJ). These two entities anticipate reduced financial capacity of nearly \$20 million and \$120 million annually, respectively. This loss will impact the NJ Turnpike's ability to fully support Gateway and NJ Transit.

This moment is an opportunity for you to set a national precedent. New York City would be the first American city to enact municipal congestion pricing. Reducing traffic and carbon emissions to benefit society should be the goal, not raising revenue. The MTA's plan is, at its core, a cash grab. The EA's appendix suggests that the MTA's traffic mitigation goal could be achieved by eliminating free parking passes to NYC officials. To add insult to injury, the City of New York is requesting an exemption for its employees from the congestion charge. The precedent that the MTA is setting is a dangerous one. San Francisco, Chicago, and Boston, among others, will look to what happens in New York when designing congestion pricing schemes of their own. While many wealthy individuals live in those cities, many disadvantaged individuals live both within and outside the city limits. What will happen to them?

On behalf of the State of New Jersey, I am requesting that the Federal Highway Administration find that the MTA's plan has significant impacts and that an EIS be required. The stakes are too high and the opportunity to comment too short to rush the MTA's plan. We share a goal of cleaner air and more public transit investment, but the burden must be paid by those who are able and willing, not by those who can least afford it, who have no alternatives, and who did not have a voice in the matter. A full EIS is needed to ensure we get congestion pricing right.

Sincerely,

Philip D. Murphy  
Governor

---

## Response to Philip D. Murphy, State of New Jersey Governor, September 9, 2022 (Submission 14254)

**14254-25320**

See response to Frequently Received Comment 10.

**14254-25319**

See response to Frequently Received Comment 1 regarding purpose and need for the Project, response to Frequently Received Comment 11 regarding duration of public comment period, and response to Frequently Received Comment 12 regarding outreach conducted prior to and after release of the EA.

**14254-25317**

In late 2021, the Project Sponsors held 19 virtual public meetings, 9 of which focused on Environmental Justice (EJ) communities. Of these, two public sessions and three EJ sessions focused on participants from New Jersey. In August 2022, the Project Sponsors held 6 virtual hearings on the Environmental Assessment itself, during which 552 speakers offered oral testimony and many more participated during the livestream or watched later, at a time of their convenience, via the project website or YouTube. Beyond the public and EJ meetings and hearings, the Project Sponsors also convened an Environmental Justice Technical Advisory Group (EJTAG) and an Environmental Justice Stakeholder Working Group (EJSWG), both to provide a means for meaningful engagement on concerns related to members of EJ communities or populations. Members of the EJ TAG were invited and include groups that work in the field of Environmental Justice; importantly, it includes representation from New Jersey. In advance of the public outreach meetings and the public hearings, agency executives in all 28 counties of the EA's regional study area were invited to participate in dialogue. The first regional agency meeting was held on September 20, 2021, and executives were invited from NJ Department of Transportation (NJDOT), NJ Transit (NJT), New Jersey Turnpike Authority (NJTA), and North Jersey Transportation Planning Authority (NJTPA), among others; executives from NJDOT, NJT, and NJTPA participated or sent staff. As part of that session, the Project Sponsors walked through the planned presentation, requested feedback, and offered to answer any questions. NJT asked about potential bus effects and NJTPA asked whether eastern Pennsylvania would be included in the EA study area. Both questions were addressed and no other questions were posed by NJ agencies then or since. The second agency meeting was held on August 4, 2022, and the same agencies were invited; attendees included representatives from NJDOT, NJT, NJTPA and NJTA. After reviewing the presentation and the findings, the meeting was opened for comments and/or questions. No questions were asked by any of the NJ agencies at that session or thereafter. Due to the level of detail and analysis in the comment period extended an additional two weeks beyond NEPA requirements, see response to Frequently Received Comment 11, response to Frequently Received Comment 12, and response to Frequently Received Comment 10.

## Response to Philip D. Murphy, State of New Jersey Governor, September 9, 2022 (Submission 14254) - Continued

### 14254-25316

The New York State legislature passed the Traffic Mobility Act (the Act), which was signed into law by the Governor in April 2019, to reduce congestion in the Central Business District and create a new, recurring, local revenue source for transit investment. Consistent with the Act, revenues would be directed to a “lockbox” fund that is designated for use only for this Program and the revenue from the CBD Tolling Program would be allocated as follows: 80 percent to New York City subways and buses, 10 percent to Metro-North Railroad, and 10 percent to Long Island Rail Road. While these provisions do not allow for the use of Project revenues for transit improvements outside of the MTA system, the CBDTP would improve travel conditions in Manhattan for all parties by a) reducing peak-hour traffic entering and leaving the city, and b) maintaining and enhancing mass transit in Manhattan as well as the other boroughs. All vehicle operators in Manhattan will benefit from reduced travel times and reduced fuel consumption, which importantly includes New Jersey drivers who visit and work in New York. New Jersey drivers paying the CBDTP toll will pay to use the Manhattan CBD infrastructure, in the same manner that New York drivers pay today to use New Jersey toll infrastructure.

### 14254-25318

The EA thoroughly analyzes and documents socioeconomic and demographic data on who currently drives into the Manhattan CBD. In particular see “Figure 5A-6. Travel Modes to Work (by age of workers)”, “Table 17-7. Estimated Origins of Minority Auto Commuters to the Manhattan CBD”, and “Table 17-8. Origins for All Commuters and Low-Income Commuters to the Manhattan CBD (All Modes)”. Also see response to Frequently Received Comment 23 and Frequently Received Comment 36.

### 14254-25314

If buses are not exempt from the toll, costs associated with the toll would be spread across all bus passengers, minimizing the increase to any one passenger. Additionally, reduced congestion will improve travel times and improve reliability of service. See response to Frequently Received Comment 16 and response to Frequently Received Comment 18.

### 14254-25315

See responses to Frequently Received Comment 33, Frequently Received Comment 39, Frequently Received Comment 22, and Frequently Received Comment 35. Please note that the EA considers potential crossing credits for the PANYNJ George Washington Bridge. Please see Scenario F which offers high crossing credits for vehicles using all Manhattan bridges and tunnels to access the Manhattan CBD.

### 14254-25324

The MTA funding needs identified in 2019 remain. Specifically, the revenues from the Project would fund a third of MTA's 2020-2024 Capital Program. With lower than anticipated ridership due to the COVID-19 Pandemic, MTA has less revenue to leverage for Capital Program funding. Funds received by the MTA through the Bipartisan Infrastructure Law (BIL) will be used to replace money MTA would have otherwise had to borrow. New Jersey will also benefit significantly from the BIL. New Jersey is anticipated to receive approximately \$12.6 billion over five years in formula funding alone, and hundreds of millions more in grant funding (source: <https://www.transportation.gov/briefing-room/bipartisan-infrastructure-law-will-deliver-new-jersey>). The Project Sponsors cannot comment on specific New Jersey agencies and their eligibility for BIL formula funding. NYS, MTA's most critical funding partner, remains a committed partner on the Hudson Tunnel Project (HTP) and NYS has in fact committed to provide half the local match for HTP and Portal North Bridge, which are used almost exclusively by Amtrak and New Jersey Transit. Regarding the impact of the Project on New Jersey's financial capacity, we believe that the estimates quoted may be overstated and furthermore do not account for increased transit farebox revenues on New Jersey Transit and PATH which are projected to see increased ridership as a result of the Project.

## Response to Philip D. Murphy, State of New Jersey Governor, September 9, 2022 (Submission 14254) - Continued

### 14254-25322

Regarding the comment that the EA suggests that "MTA's traffic mitigation goal could be achieved by eliminating free parking passes to NYC officials", there is an error in Table 2-2 of the EA where it is noted that Alternative O-1 (reduce government issued parking permits) "Meets" Objectives 1 and 2 (reduces daily VMT by 5% and 10%, respectively). That table should say "Does not meet" for Objectives 1 and 2. Therefore, since Alternative O-1 does not meet purpose and need, nor any of the three objectives, it has been eliminated from further consideration. Regarding the comment that the City of New York is "requesting an exemption for its employees from the congestion charge", New York City fleet vehicles are used to provide essential public services within the Central Business District. Mayor Adams' comments on exempting city vehicles referred to service vehicles, such as garbage trucks and school buses. See also, response to Frequently Received Comment 2.

### 14254-25323

Any future congestion pricing proposals in other cities requiring federal approval would require their own NEPA reviews, and the potential effects of such not-yet-foreseen proposals are beyond the scope of this EA. See also response to Frequently Received Comment 36 and Frequently Received Comment 27.

### 14254-25321

See response to Frequently Received Comment 10 regarding preparation of an Environmental Assessment.



## Philip Murphy, Governor of New Jersey, September 27, 2022 (Submission 14901)



FHWA - NY Division  
 RE: CBDTP EA, Consolidated State of New Jersey Government Comments  
 Leo W. O'Brien Federal Building  
 11A, Clinton Ave, Suite 719, Albany, NY 12207

Dear Federal Highway Administration,

The New Jersey Department of Transportation (NJDOT), NJ Transit (NJT), New Jersey Turnpike Authority (NJTA), have reviewed the National Environmental Policy Act (NEPA) Environmental Assessment (EA), for the Central Business District (CBD) Tolling Program (the Program or CBDTP).

While New Jersey is conceptually open to traditional congestion pricing that makes traffic reduction its main goal, the Program as proposed has revenue production as a primary goal and the EA released outlines scenarios that cause concern among New Jersey commuters and agencies. There is a high degree of uncertainty and potential for significant impact associated with the CBDTP as outlined. As such, an Environmental Impact Statement should be conducted.

New Jersey roads will be impacted, our vulnerable communities exposed to more congestion and air quality issues, and our state services will be further strained. New Jersey will be left with the difficult decision of considering fare hikes to accommodate these costs, which would be passed on to customers, many of them socioeconomically disadvantaged. Perversely, this may disincentivize transit use and would in fact increase Vehicle Miles Traveled on the New Jersey side of the river, the exact opposite of one of the Program's stated goals.

The Environmental Assessment (EA) is long and complex: 4005 pages in total. Six weeks at the end of summer is insufficient for review and comment. Public hearings should have been held as part of the EA's development, not after the fact. Due to the lack of public outreach, few New Jerseyans had opportunity to comment on the EA. New Jersey residents have the unfortunate distinction of being directly impacted by the Metropolitan Transportation Authority (MTA) plan without any representation in the New York State Legislature, the MTA Board, or the Traffic Mobility Review Board and will not receive any direct benefit from the revenue that the MTA will raise as its stated goal.

Please find attached technical comments from the impacted New Jersey transportation agencies. While we share a goal of cleaner air and greater public transit investment, the burden must be paid by those who are able and willing, not by those who can least afford it, who have no alternatives, and who did not have a voice in the matter. We must get congestion pricing right.

Given the outstanding concerns and lack of analysis produced on how this program will affect New Jersey, the State requests completion of an Environmental Impact Statement. Thank you for your review and consideration.

  
 Philip D. Murphy  
 Governor

*Non-Profit is an Equal Opportunity Employer • Printers use Recycled Paper and Recycled Ink*

14901-25626

Shared Comments by New Jersey Transportation Agencies (NJDOT, NJT, and NJTA)

1. **The EA does not adequately consider New Jersey, which will be significantly impacted.** Not enough analysis has been done on the impacts that the Central Business District (CBD) Tolling Program (the Program) will have on New Jersey. The Best Practices Model (BPM) used by this Program in capturing New Jersey market dynamics is limited. Primarily a regional impact model, the BPM is not necessarily well validated at the facility level, especially in New Jersey.

The National Environmental Policy Act (NEPA) EA for the CBDTP contains a detailed discussion of impacts to various neighborhoods in New York City, but only a generalized analysis of New Jersey. The modeling considers the overall New Jersey transportation network but fails to perform fine-grained analysis of the different markets within New Jersey as it does with New York. It treats areas such as Bergen, Hudson and Essex Counties similarly, even though the trip-making patterns in those areas vary based on the available transportation network, demographics, dominant employment sector and other factors. For example, Hudson County's percentage of households without access to an automobile is similar to Queens (33% vs 37%). The EA contains a neighborhood level discussion of Queens auto access (p. 5A-16) but no such detail regarding Hudson County, even though they are similarly situated with respect to Manhattan (i.e., the Hudson River is all that separates Hudson County from the CBD just as only the East River separates Queens County from the CBD).

14901-25627

2. **Equity and environmental justice concerns.** The CBDTP will drive new traffic to disadvantaged communities. Traffic will be driven both due to toll shopping at the Hudson River crossings that receive a credit and because the economic burden created by the CBDTP charge of up to \$23 will cause traffic to New Jersey's main transit hubs for a "park and ride" response. The Lincoln and Holland tunnels are fed by roads that go through communities such as Union City, Jersey City, and Newark. Similarly, New Jersey's transit hubs – due to legacy passenger railroad investments – are concentrated in some of the same communities enumerated above (Hoboken, Jersey City, and Newark). One in four children in Newark has asthma, three times the national rate. The CBDTP appears to be in direct contradiction to the President's Justice40 commitments as well as Governor Murphy's E.O. 23 on environmental justice.

14901-25629

The socioeconomic and demographic data on who currently drives into the Manhattan CBD is not available or considered in this analysis. Consider that many of these individuals cannot afford to live in Manhattan and must travel great lengths to reach their workplace. Some may work in professions that require off-shift travel when public transit service is reduced. It would be a mistake to assume, without data, that only the most privileged drive into New York.

14901-25628

3. **Capacity concerns.** The increase in mass transit ridership (e.g., NJ Transit, PATH, private bus carriers, etc.), which may result from the proposed project would need to accommodate the demand for increased parking facilities and access to mass transit areas outside of the CBD. Furthermore, with the commencement of several infrastructure projects such as the Hudson Tunnel Project and the New Port Authority Bus Terminal, modifications to travel patterns to accommodate construction will also be required. The NJ Transit network may not be prepared for an increase in ridership due to capital program commitments to these projects, its existing conversion of its bus fleet to a Zero Emission bus fleet, and the nationwide shortage of Commercial Driver's License holders (a requirement to serve as a bus operator). Subchapter 4D considers parking in some detail in New York City neighborhoods but speaks only generally of the roughly 400 commuter and intercity rail stations in the regional analysis area. No analysis of the capacity to meet the anticipated increased public transit ridership at park-and-ride facilities on the NJ Turnpike roadways or other New Jersey roadways was performed for the EA.



## Philip Murphy, Governor of New Jersey, September 27, 2022 (Submission 14901) - Continued

Comments from New Jersey Department of Transportation (NJDOT):

The following topics warrant further consideration and study for areas outside of the CBD:

**1. New traffic patterns need to be studied.** The EA mentions that with all the CBD tolling alternatives, between 72 percent and 82 percent of the total traffic reductions in the Manhattan CBD would be from through trips finding other paths that do not include the Manhattan CBD. This will lead to new traffic patterns that must be studied as travelers take diversions to avoid the CBD tolling area, leading to increased traffic and potentially environmental impacts (air and noise) in other areas.

**2. A comprehensive economic evaluation of tolling costs for travelers entering and exiting the CBD by vehicle or truck, more specifically commuters from New Jersey is not included in the EA.** With inflationary pressures already in the costs of goods and services today, an additional cost to these commuters and transportation of goods might be overly burdensome. Furthermore, the collection of tolls on Environmental Justice communities may lead to double tolling for using both bridges/tunnels as well as the CBD access with communities already striving to pay for transportation access. Additionally, New Jersey may need to enable cost-saving measures for certain New Jersey residents/users, similar to what MTA is proposing for certain New York residents/users (disabled, elderly, school-age, etc.) to defray the cost of CBD tolls that are passed onto these riders. Consideration should be given to providing funding from the toll money to offset these costs for New Jersey residents/users.

**3. New Jersey is disproportionately affected.** In Appendix 4.A.2, Transportation, both the 2023 and 2045 Work Journeys to Manhattan CBD tables show projected increased journeys from New Jersey, while journeys from other non-CBD areas into the CBD decrease significantly. Based on a small increase in mode share, New Jersey commuters are affected disproportionately due to this policy (all tolling scenarios).

**4. Air quality analyses show negative results.** Air quality analyses in New Jersey (mesoscale, mobile source air toxic, and greenhouse gas) resulted in the biggest increase and decrease in vehicle miles traveled in Bergen and Hudson Counties, respectively. The analyses demonstrate increases in air quality pollutants, including carbon monoxide (CO), ozone (O<sub>3</sub>), particulate matter (PM<sub>2.5</sub>) and (PM<sub>10</sub>), sulfur dioxide (SO<sub>2</sub>), volatile organic compounds (VOC), nitrogen oxides (NO<sub>x</sub>) and carbon dioxide (CO<sub>2</sub>) in the 2023 and 2045 projections for Bergen County. The potential adverse air quality effect is related to emissions from truck avoidance of the CBD tolling area.

14901-25639

14901-25638

14901-25635

14901-25634

14901-25636

14901-25637

Comments from New Jersey Turnpike Authority (NJTA):

The below was compiled based on comments received from the NJTA's Finance, Engineering and Operations Departments, and the NJTA's General Traffic Engineering Consultant and General Consulting Engineer and represents a high-level review of the EA with a focus on the potential impacts to the NJTA.

It should be noted that a detailed review of the technical analyses was not performed as part of this review due to time constraints and the numerous tolling scenarios presented with a voluminous amount of supporting data.

**1. Insufficient analysis for New Jersey.** There appears to be a significantly reduced level of analyses performed for the New Jersey impacts as compared with the level of analyses performed for the New York impacts specifically at the approaches to the George Washington Bridge (Interstate 80 and Interstate 95 at the northern end of the NJ Turnpike roadways), and Approaches to the Verrazano Bridge (Interchanges 10, 11, and 13).

**2. New Jersey was inadequately consulted.** Page 3-1 of the EA indicates Federal and New York States agencies were consulted in preparing the EA. Why weren't New Jersey agencies similarly consulted as the Program also has significant impacts on New Jersey?

**3. CBDTP will impact NJTA's ability to maintain its assets.** NJTA's operation, maintenance, and capital improvements are funded from toll revenue. The CBDTP is anticipated to make changes in travel patterns that will impact NJTA's toll revenue by reducing vehicular trips into Manhattan, which will alter traffic on NJ Turnpike roadways. Revenue reductions on the NJ Turnpike roadways resulting from traffic diversions or increased use of alternate means of transportation may impact the ability of the NJTA to fund its Capital Improvement Program and/or State-of-Good-Repair Maintenance Program. Using the NJTA forecast for systemwide annual toll revenue in 2023, the CBDTP is estimated to result in an annual loss of \$8.1M to \$18.0M to NJTA, depending on the potential tolling scenario adopted. What criteria has been included in the tolling scenarios to consider the impacts to the NJTA's revenue and what measures are proposed to mitigate them?

**4. CBDTP will result in accelerated deterioration of NJTA assets.** Page 2-34 of the EA indicates that net revenues to fund \$15B for MTA capital projects will be generated. This net revenue will come at a cost to New Jersey transportation agencies that would need to increase investments in their infrastructure to address accelerated deterioration due to additional diverted traffic volume.

**5. CBDTP does not contemplate mitigation adverse impacts to NJTA.** What analysis has been performed to demonstrate the impacts to the operation of the NJ Turnpike roadways to accommodate the anticipated diversions and how does the CBDTP propose to mitigate these impacts?

**6. CBDTP has not articulated revenue sharing with impacted agencies.** Has the MTA considered mitigating impacts from the CBDTP by cost sharing of the net revenues from the CBDTP with the impacted agencies?



## Philip Murphy, Governor of New Jersey, September 27, 2022 (Submission 14901) - Continued

14901-25643

**Comments from NJ Transit (NJT):**

NJ Transit's review was performed within the timeframe constraints of the review period. It is not comprehensive, and NJ Transit believes that much additional analysis is required to address the EA's description of potential impacts to both roadways and transit networks.

Based on NJ Transit's knowledge of the modeling techniques used and the stated results as they apply to New Jersey and the transportation network in the state, NJ Transit does not agree that a Finding of No Significant Impact (FONSI) is an appropriate outcome of the NEPA process at this time.

14901-25640

The Program's modeling approach conveys an inappropriate level of certainty regarding potential Program impacts. The EA should acknowledge that there is an intrinsic lack of forecasting certainty given the scope of the Program, and consequently should not define (and dismiss) the potential for impacts on the transportation network as is done in EA. To state that based on high-level modeling no major impacts are identified, and therefore the Project Sponsors are not responsible for any mitigation, strains credibility in the context of such a broad-based regional Program for which there is no national precedent.

**1. Additional analysis of tolling scenarios is needed.** Such analysis is needed to define the range of possible outcomes more accurately should the Program be implemented. The EA should acknowledge the potential for additional impacts given the sensitivity of New Jersey's transportation network to tolling.<sup>1</sup> The EA should include a more flexible framework to address unforeseen impacts; failing to do so would shift the mitigation burden for New York City's transportation work to NJ Transit.

14901-25641

Key transit facilities are potentially subject to increased area automobile traffic, which would not only cause inconvenience but also potential operational impacts, especially to bus passengers, who comprise most of the NJ Transit customers and are more likely to be members of minority and low-income populations. Associated potential air quality impacts could result from those auto users who no longer drive into the CBD but instead travel via local roads to transit nodes in New Jersey. These locations are in various stages of monitoring for attainment of air quality standards of various pollutants of concern. NJ Transit recommends further broad-based monitoring at multiple locations as issues could emerge at transit hubs including Secaucus Junction, Journal Square, Liberty State Park, Newark Penn Station, or other facilities. Mitigations should be identified to address potential impacts to both crowding on the transit system, and traffic congestion and air quality around key transit facilities. The Program identifies a goal of auto traffic reduction traveling to the CBD, and presumably a shift of motorists to transit, but under some scenarios there are contradictory policy proposals, including a lack of exemptions for transit providers. This could increase operating costs for such providers, which could result in the need for those providers to implement fare increases, and therefore lead to less attractive transit options across the region. The Program increases the potential for increased stress on the transit system at what are generally the highest transit load points approaching the Manhattan CBD.

14901-25642

**2. The commuter bus charge is problematic.** Certain scenarios contemplated by the Program involve charging NJ Transit buses a fee, amounting to a transfer subsidy to MTA by NJ Transit. Costs are estimated to be between \$12M-\$25M per year, above the more than \$2M that NJ Transit pays to the Port

<sup>1</sup> NJ Transit would like to acknowledge the limited engagement that MTA initiated regarding potential impacts at Hoboken (although such potential impacts were not identified at other locations). While the EA acknowledges NJ Transit's feedback, the document does not properly acknowledge certain constraints at Hoboken. The application of CEQR techniques led to incorrect statements that there are not "capacity constrained" elements, especially under perturbed conditions. (P 4C-62). NJ Transit appreciates the EA's statement that "If Tolling Scenario E or F is selected by the MTA's Triborough Bridge and Tunnel Authority (TBTA), the Project Sponsors will monitor ridership at this station during the first year after Project implementation to evaluate whether projected ridership has materialized due to the Project. The specific plan for monitoring is being developed in coordination with PANYNJ (PATH) and NJ Transit" P 4C-64. However, NJ Transit believes that under any scenario, a monitoring plan should be developed and in place for multiple years.

14901-25642

Authority of New York and New Jersey (PANYNJ) for PABT departure fees and more than \$15M in PANYNJ tolls on the George Washington Bridge, Lincoln Tunnel, and Holland Tunnel (half of which accrues to the State of New York).

In the case of the Program, it may propose charging NJ Transit buses even though the majority do not touch NYC streets in an appreciable manner, as most trips utilize the PANYNJ-owned Lincoln Tunnel and the Port Authority Bus Terminal (PABT) and associated ramps.<sup>2</sup>

Any scenario that charges buses is not consistent with the Program's stated Purpose & Need, Objectives 1 and 2, to reduce vehicle miles travelled and the number of vehicles in the Manhattan CBD, because it could result in the need for NJ Transit to offset costs via a fare increase, thereby discouraging ridership.<sup>3</sup> Scenarios B and F (and potentially E) provide the necessary exemption for buses, and Scenario F's George Washington Bridge credit would reduce toll shopping at the Lincoln and Holland Tunnels, which could reduce traffic impact on buses utilizing those tunnels.

14901-25644

The Program's implementation would be permanent, and therefore would outlast the impact of the Covid-19 pandemic and associated depressed weekday ridership between New York and New Jersey (weekend travel has returned to roughly pre-pandemic levels). As a result of the Program, more users may shift to a system that was operating at capacity during peak hours, which the EA fails to acknowledge may result in the potential need for NJ Transit to operate more service, with increased maintenance/operating costs and/or the potential for fare increases.

The EA notes the potential for +2.3% increase in NJ Transit rail. Depending on the specific rail service, that ridership increase coupled with ambient growth could require additional service or enhanced capacity if possible, as some trains were already operating well above capacity. Adding service on either the New York-bound bus and rail systems is challenging given the existing capacity constraints at the Port Authority Bus Terminal and Penn Station New York.

Capacity improvements to these facilities and supporting infrastructure are not anticipated for at least a decade. Similarly adding the identified 1.5% to NJ Transit's Lincoln Tunnel-bound bus services would have an impact on a system that was already operating at capacity during peak hours. As noted above, the EA fails to consider that specific percentage increases are speculative, that impacts cannot be predicated with certainty, and that impacts would be distributed unevenly throughout the transit system with resultant uneven impacts. The EA does not demonstrate the fine-grained modeling needed to come to that conclusion with certainty, based on a review of Appendix 4C.<sup>4</sup>

Even modest increases in bus service would result in millions of dollars of new expenditures per year. While any analysis or projection of potential needed service must be treated as extremely rough for the reasons noted above, by one estimate the Program's impacts would lead NJ Transit to add over 100,000 bus trips per year and over 4,700 train trips in a 2045 horizon year context, utilizing pre-pandemic

<sup>2</sup> It is notable that there is significant complexity in the proposed tolling infrastructure in PABT area (figure on EA page 2-23) and it is not clear how reliable that infrastructure would be in charging tolls appropriately. ||

<sup>3</sup> Any scenario that charges an individual bus multiple times per day will be an incentive NJ Transit to keep buses in NYC rather than return to NJ in midday, despite the operational efficiency of doing so.

<sup>4</sup> Suburban commuter rail options in the greater New York City area are extensive. Metro-North and Long Island Rail Road (LIRR) have seated capacity of 100 passengers per car or more. These routes cover extensive geographies, with 13 commuter rail routes serving New York suburban counties and an additional 9 serving New Jersey. Train schedules operate at regular intervals, with most routes operating at least half-hour headways during peak periods (many routes operate more frequently). Increases in ridership due to the Project would be incremental and distributed across the region, such that noteworthy increases are not projected in any local geography. In coordination with Metro-North and LIRR, CEQR methodologies were used to assess ridership of commuter rail lines and stations. This analysis recognizes that five additional passengers within a train car in its most crowded point would be noticeable. Similarly, analyses of stations for the New Jersey Transit Corporation (NJ Transit) and PATH were performed using CEQR guidelines for consistency and because NJ Transit and the Port Authority of New York and New Jersey (PANYNJ) do not have an alternative guideline. This statement demonstrates the difference in analysis of the LIRR and MTR systems (seating per car, service levels and its potentially inappropriate application to NJ Transit rail service (which does not necessarily operate at regular intervals, for example)).

## Philip Murphy, Governor of New Jersey, September 27, 2022 (Submission 14901) - Continued

14901-25644

baseline passenger volumes. While these estimates are not resource constrained and may or may not be feasible at that point in time, they demonstrate that the Program's impacts may be far greater than are stated in the EA.

14901-25645

**3. CBDTP does not consider regional economic dynamics between NJ and NY:** Among the three suburban locations outside of NYC providing 20 percent of NYC's employees (New Jersey, Connecticut and the Hudson Valley, and Long Island), New Jersey sends the most workers and its labor exports to NYC have grown the fastest, according to data from the US Census as well as NY Metropolitan Transportation Council's Hub Bound Report. The average annual tax yield to New York State per New Jersey return is \$8,520. Every 1,000 NJ commuters accommodated by Trans-Hudson transit capacity thus generates approximately \$8.52M annually in additional personal tax revenue for New York State, according to the New York State Department of Taxation and Finance. The benefits of NJ Transit provided service to New York State (and City) need to be factored into the ultimate policy prescriptions that the Program may recommend. The Program should not recommend policies that inflict harm on other transit providers in the region.



## Response to Philip Murphy, Governor of New Jersey, September 27, 2022 (Submission 14901)

### 14901-25621

See response to Frequently Received Comment 1, Frequently Received Comment 10, and Frequently Received Comment 9.

### 14901-25622

Please see responses to the shared comments by New Jersey Department of Transportation (NJDOT) that are part of the responses to this submission.

### 14901-25623

In late 2021, the Project Sponsors held 19 virtual public meetings, 9 of which focused on Environmental Justice (EJ) communities. Of these, two public sessions and three EJ sessions focused on participants from New Jersey. In August 2022, the Project Sponsors held 6 virtual hearings on the Environmental Assessment itself, during which 552 speakers offered oral testimony and many more participated during the livestream or watched later, at a time of their convenience, via the project website or YouTube. Beyond the public and EJ meetings and hearings, the Project Sponsors also convened an Environmental Justice Technical Advisory Group (EJTAG) and an Environmental Justice Stakeholder Working Group (EJSWG), both to provide a means for meaningful engagement on concerns related to members of EJ communities or populations. Groups that work in the field of Environmental Justice were invited to the EJ TAG, which includes representation from New Jersey. In advance of the public outreach meetings and the public hearings, agency executives in all 28 counties of the EA's regional study area were invited to participate in dialogue. The first regional agency meeting was held on September 20, 2021, and executives were invited from NJDOT, NJ TRANSIT (NJT), New Jersey Turnpike Authority (NJTA), and North Jersey Transportation Planning Authority (NJTPA), among others; executives from NJDOT, NJT, and NJTPA participated or sent staff. As part of that session, the Project Sponsors walked through the planned presentation, requested feedback, and offered to answer any questions. NJT asked about potential bus effects and NJTPA asked whether eastern Pennsylvania would be included in the EA study area. Both questions were addressed and no other questions were posed by NJ agencies then or since. The second agency meeting was held on August 4, 2022, and the same agencies were invited; attendees included representatives from NJDOT, NJT, NJTPA and NJTA. After reviewing the presentation and the findings, the meeting was opened for comments and/or questions. No questions were asked by any of the NJ agencies at that session or thereafter. For more information about what outreach was conducted during the NEPA process see response to Frequently Received Comment 12.

## Response to Philip Murphy, Governor of New Jersey, September 27, 2022 (Submission 14901) - Continued

**14901-25625**

The New York State legislature passed the Traffic Mobility Act (the Act), which was signed into law by the Governor in April 2019, to reduce congestion in the Central Business District and create a new, recurring, local revenue source for transit investment. Consistent with the Act, revenues would be directed to a “lockbox” fund that is designated for use only for this Program and the revenue from the CBD Tolling Program would be allocated as follows: 80 percent to New York City subways and buses, 10 percent to Metro-North Railroad, and 10 percent to Long Island Rail Road. While these provisions do not allow for the use of Project revenues for transit improvements outside of the MTA system, the CBDTP would improve travel conditions in Manhattan for all parties by a) reducing peak-hour traffic entering and leaving the city, and b) maintaining and enhancing mass transit in Manhattan as well as the other boroughs. All vehicle operators in Manhattan will benefit from reduced travel times and reduced fuel consumption, which importantly includes New Jersey drivers who visit and work in New York. New Jersey drivers paying the CBDTP toll will pay to use the Manhattan CBD infrastructure, in the same manner that New York drivers pay today to use New Jersey toll infrastructure.

**14901-25624**

Comment noted.

**14901-25626**

The EA provides for a comprehensive profile of the regional transportation system and the social and demographic characteristics of its residents and workers, and, appropriately applies the BPM to understand the regional implications of implementing the proposed Project. As detailed in Chapter 4A, “Regional Transportation Effects and Modeling,” the BPM incorporates all roadways and nearly all modes of public transit in a regional demand model, as well as the social and demographic data aggregated to allow for an understanding and estimate of transportation demand from any point in the region to any other point in the region. It is the tool that NYMTC and other agencies use to evaluate and establish the State Transportation Implementation Plan and ensure that major transportation initiatives are reflected in federally mandated Clean Air Act conformity evaluations. As presented in Chapter 4B, “Highways and Local Intersections,” the BPM regional modeling output was carried into and calibrated for peak hour volumes at the major crossings (all bridges and tunnels leading into Manhattan) and for intersections in the traffic study area identified to capture the locations with the greatest change in traffic as a result of the CBD Tolling Program. For more information about the use of the BPM, see response to Frequently Received Comment 9. The EA’s more focused attention on Queens and Brooklyn localized traffic conditions is appropriate based on the regional profile described above and the identification of areas with the greatest potential to affect local traffic conditions. As shown in Chapter 1, “Introduction,” Figure 1-6, Queens accounts for 17 percent of all the CBD commuting trips compared to about 5 percent for Hudson County and generates well over three times the number of commuters and five times the number of auto trips. Brooklyn, Queens, and the Bronx alone account for 63 percent of the commuter trips to the Manhattan CBD.

## Response to Philip Murphy, Governor of New Jersey, September 27, 2022 (Submission 14901) - Continued

### 14901-25627

Recognizing concerns that were raised during the public comment period, additional assessment was performed to further understand the effects of the CBD Tolling Program in the South Bronx and in other Environmental Justice communities. Technical Memorandum, Appendix 17D, "Environmental Justice" reviews the historical context related to traffic and land use, air quality, and health burdens experienced in the South Bronx and elsewhere in the EJ Study Area, along with discussion about the effects of the project. Also please see response to Frequently Received Comment 33 regarding the CBD Tolling Program's effects on traffic outside the Manhattan CBD. See response to Frequently Received Comment 35 regarding the CBD Tolling Program's effects on air quality and Frequently Received Comment 36 regarding effects on the environmental justice communities. See response to Frequently Received Comment 39 for additional investments to which the Project Sponsors are committing.

### 14901-25629

The EA provides extensive demographic and economic analyses for the region and commutation patterns that include New York City, New Jersey, other New York counties north and east of New York City, as well as Fairfield and New Haven Counties in Connecticut. Subchapter 5A, "Social Conditions: Population Characteristics and Community Cohesion," evaluates how many people do not currently have convenient access to public transportation options and shows the potential change in work trips in the regional study area and the Manhattan CBD by all modes. In Chapter 6, "Economics," the characteristics of the workforce are profiled from a regional basis, job type, commuting patterns, and other indicators to identify workforce metrics and evaluate how CBD Tolling may adversely effect overall employment patterns. In Chapter 17, "Environmental Justice," the EA provides extensive baseline analyses for all 28 counties mapping the locations of low-income and minority residents following established federal guidance and was expanded based on input from extensive Environmental Justice outreach in coordination with the FHWA as NEPA lead agency. In addition, Chapter 17 provides regional travel characteristics and commuting patterns, and travel modes are summarized by region and include regionally delineated information for both minority and low-income commuters. FHWA and the Project Sponsors acknowledge that certain segments of the population in New Jersey, as well as New York and Connecticut, would have no convenient or available alternative to driving. As required by the Traffic Mobility Act and FHWA's Value Pricing Pilot Program, the proposed tolling program would have a variable toll amount. Variable tolls work by shifting purely discretionary rush hour travel to other transportation modes or to off-peak periods, taking advantage of the fact that the majority of rush hour drivers are not commuters. By removing a fraction (even as small as 5%) of the vehicles from a congested roadway, pricing enables the system to flow much more efficiently, allowing more cars to move through the same physical space. While the details of the toll variation have not been determined, the Project Sponsors anticipate that the tolls would vary by time of day, so that the highest tolls would be charged during peak periods when congestion is the greatest; most off-shift travel would not be subject to these toll rates. Specific peak periods have not yet been finalized and would be determined when the final tolling structure is established. For more information on the potential effects on drivers who do not or cannot use public transportation and mitigation measures see response to Frequently Received Comment 23 and Frequently Received Comment 39, respectively.

## Response to Philip Murphy, Governor of New Jersey, September 27, 2022 (Submission 14901) - Continued

**14901-25628**

See response to Frequently Received Comment 26. As evaluated in Chapter 4C, “Transit,” the overall change in demand for transit is between about 1 and 2 percent, a relatively modest change given that the vast majority of trips are already made by transit and will continue to be. As described in Frequently Received Comment 8, 2019 data was used for the analysis. Ridership has not yet recovered to pre-COVID 2019 levels, which means that the analysis of potential effects of the Project on transit elements is conservative. Moreover, the challenges of meeting current and future public transit needs, as noted in the comment, are endemic and not directly tied to implementation of the proposed Project.

Regarding Parking, see response to Frequently Received Comment 34 and response to Comment 25641 below.

**14901-25630**

The EA analyses are inclusive of understanding the new patterns created by circumferential diversions with analysis of potential effects provided in Chapter 4B, “Traffic and Local Intersections,” Chapter 10, “Air Quality,” and Chapter 17, “Environmental Justice.” See response to Frequently Received Comment 33 and Frequently Received Comment 35.

**14901-25631**

Chapter 4A, Regional “Transportation Effects and Modeling,” includes an assessment of typical commuting costs from around the region that includes estimated costs for mileage, tolls, and parking. Representative locations were drawn from throughout the 28-county study area including three locations in New Jersey; Figure 4A-3, and Tables 4A-18 and 19 provide the summary information of these analyses. With respect to environmental justice communities, it is worth noting that the 2,696 low-income drivers from New Jersey enter the Manhattan CBD for work, represents about 1% of all CBD commuters originating from New Jersey. Also see response to Frequently Received Comment 32 and Frequently Received Comment 22. While the provisions of the Traffic Mobility Act, passed by the New York State Legislature in 2019, do not allow for the use of Project revenues for transit improvements outside of the MTA system, the CBDTP would improve travel conditions in Manhattan for all parties by a) reducing peak-hour traffic entering and leaving the city, and b) maintaining and enhancing mass transit in Manhattan as well as the other boroughs. All vehicle operators in Manhattan will benefit from reduced travel times and reduced fuel consumption, which importantly includes New Jersey drivers who visit or work in New York. New Jersey drivers paying the CBDTP toll will pay to use the Manhattan CBD infrastructure, in the same manner that New York drivers pay today to use New Jersey toll infrastructure.

**14901-25632**

Overall, the model is showing a meaningful reduction in vehicle trips to the CBD and the Holland and Lincoln Tunnels would be beneficiaries of congestion relief. PATH and NJT buses and rail show a small gain in ridership of between 1 and 2 percent. Finally, as noted in the comment, New Jersey is growing its workforce engagement in the CBD and this is somewhat reflected in the overall increase in journeys (although the small percentage changes do not reflect a clear trend within the overall model).

**14901-25633**

See response to Frequently Received Comment 35.

**14901-25639**

Comment noted.



## Response to Philip Murphy, Governor of New Jersey, September 27, 2022 (Submission 14901) - Continued

### 14901-25638

The environmental analysis framework used in the EA is described in Chapter 3 and further detailed in each chapter. As it relates to regional transportation effects, see Chapter 4A, Section 4A.3 "Evaluating the Project." The analysis of traffic effects were guided by a comprehensive screening to determine the locations of highways and intersections that would be most likely affected by the Project. The screening analysis covered the 28-county New York/New Jersey metropolitan area and included the various tolling scenarios being considered. The traffic analysis examined the New Jersey approaches to the Holland and Lincoln tunnels as well as four intersections in Jersey City. Because traffic to and from the PANYNJ tunnels would be reduced for all tolling scenarios during the AM, MD, and PM peak periods there would be a beneficial effect on traffic at the New Jersey approaches. The traffic study examined the potential effects of circumferential diversions in New Jersey via the George Washington Bridge (GWB). The traffic analysis indicated that there would not be an adverse effect on the GWB. Because projected increases in traffic would be distributed among multiple major highways in New Jersey in close proximity to the GWB, including I-95, I-80, Route 46, Route 4, and the Palisades Interstate Parkway, the increase in traffic along any single highway would be small. Therefore, most of the highways in New Jersey screened out. The EA did analyze the New Jersey Turnpike Eastern Spur which is projected to have higher traffic at some locations. This highway would be expected to have very small changes in speeds and delays during the peak hours that would not be noticeable. There would not be a change in the level of service and there would not be an adverse effect. Therefore, it was concluded that there would not be an adverse traffic effect on New Jersey roadways due to circumferential diversions along the GWB. Similarly, analysis was conducted for traffic effects of diversions to the Verrazano Narrows Bridge (VNB) along the Staten Island Expressway (SIE), which is congested during certain times during the day. That analysis indicated that there would be a small change in speeds and delays during the peak periods, but the change would not be noticeable. There would not be a change in the level of service and there would not be an adverse traffic effect. Because diversionary traffic at the VNB and along the SIE would be distributed among the three Staten Island Bridges (Bayonne Bridge, Goethals Bridge, and Outerbridge Crossing), the increase in traffic to and from New Jersey would be dispersed along multiple highways. Therefore, the effect on any highway in New Jersey would be expected to be less than the effects analyzed along the SIE. Therefore, there would not be an adverse traffic effect on New Jersey roadways resulting from

### 14901-25638

circumferential diversion via the VNB. For further information on air quality effects, please see response to Frequently Received Comment 35.

### 14901-25635

Please see responses to comments raised in the cover letter that is part of this submission. In addition, in preparing EA technical analyses the Project sponsors reached out to the Port Authority and NJT to review the potential for adverse effects and to identify mitigating improvements to avoid any potential adverse effect.

### 14901-25634

See response to Frequently Received Comment 1. The New Jersey Turnpike Authority's 2022 Annual Budget-in-Brief showed toll revenues of over \$2 billion for 2022 and beyond (source: <https://www.njta.com/media/6349/2021-2022-revenue-certification.pdf>). Losses of \$8.1 to \$18.0 million as a result of the Project, if accurate, would account for less than 1% of toll revenues.

### 14901-25636

CBFTP is expected to result in decreases in traffic in New Jersey along roadways leading to and from the Holland and Lincoln tunnels and increases in traffic along roadways leading to and from the Staten Island Bridges which feed the Verrazano-Narrows Bridge. The net change in traffic along NJTA facilities is expected to be very small. Therefore, there would not be an overall change in the deterioration rates of NJTA assets. CBT has considered the potential of adverse effects throughout the 28-county NY-NJ metropolitan area and has contemplated mitigation measures of adverse effects, if they occur, throughout the region. The traffic and air quality analyses have not identified any adverse effects in New Jersey and, therefore, there are no mitigation measures proposed in New Jersey.

## Response to Philip Murphy, Governor of New Jersey, September 27, 2022 (Submission 14901) - Continued

**14901-25637**

As described previously, the traffic analysis conducted has not identified any adverse effects to facilities operated by New Jersey agencies and, therefore, revenue sharing is not being contemplated by the MTA. That said, any identified mitigation would be funded by the Project Sponsors. Please see responses to comments raised in the cover letter that is part of this submission.

**14901-25643**

Comment noted.

**14901-25640**

See response to Frequently Received Comment 9 and Frequently Received Comment 26. Based on the potential regional effects of the CBD Tolling Program, a very large 28-County study area (including New Jersey, New York and Connecticut) was established. The regional Best Practices Model is the best planning tool to evaluate the effects of the Project in the 28-County region. It was developed by the New York Metropolitan Transportation Council (NYMTC) and was used to ensure the widest reach possible and already incorporates New Jersey counties since it is such an important part of Manhattan's commuter-shed (other agencies such as the Port Authority also use versions of the BPM). The level of mitigation requirements identified is based on the analysis of the change in users at stations at peak loading times.

**14901-25641**

Table 4C-7 indicates transit ridership increases of 1.2 to 1.8 percent across the NYC region, compared to 0.3 to 2.3 percent increases for NJ Transit commuter rail and 0.5 to 1.1 percent for NJ Transit buses. This was further examined at specific transit stations and on lines in Sections 4C.4.2.3 and 4C.4.2.5. In examining projected increases on NJ Transit commuter rail and bus lines at the maximum load points, no buses would have increases of more than 50 new passengers in the AM Peak hour in the representative tolling scenario, and no individual commuter rail routes would increase by more than 200 new passengers. Moreover, increases at transit stations were examined, and outside of the three hubs of service connecting to New York City, station increases were below the 200-passenger increase warranting further analysis. As indicated in Section 4C.4.2.5, the three New Jersey transit stations (Secaucus Junction Station, Hoboken Terminal, and Newark Penn Station), serve large numbers of transferring commuters, rather than new passengers entering from the street. At these stations, one adverse effect would materialize if Scenario E or F is selected by the TBTA Board, and through consultation and in coordination with NJ TRANSIT and PANYNJ (PATH) if this is determined, the committed improvements will be implemented to alleviate the adverse effect. Overall, the increases associated with the Project's small increase in demand for transit will be distributed across the transit system, and relative to the growth NJ Transit is projecting is negligible. See response to Frequently Received Comment 33, Frequently Received Comment 26, Frequently Received Comment 34, and Frequently Received Comment 35.

**14901-25642**

If buses are not exempt from the toll, costs associated with the toll would be spread across all bus passengers, minimizing the increase to any one passenger. See response to Frequently Received Comment 1 and Frequently Received Comment 18.

## Response to Philip Murphy, Governor of New Jersey, September 27, 2022 (Submission 14901) - Continued

### 14901-25644

Because there are no specific Federal or state criteria for analyzing an action's potential effects on transit services, the assessment of environmental consequences was developed consistent with the methodologies outlined in the City of New York's 2020 City Environmental Quality Review (CEQR) Technical Manual. These methodologies, thresholds, and criteria have been established to be specific to local conditions, and most New York City-based National Environmental Policy Act (NEPA) reviews use the available state and local guidance appropriate to evaluate the potential for adverse effects. Because of the high land use density and ridership levels in the New York metropolitan area, an evaluation based on CEQR Technical Manual guidance provides an analysis whereby practical improvement measures can be identified to avoid or ameliorate adverse effects, if any. Analyses of stations for the New Jersey Transit Corporation (NJ TRANSIT) and PATH were performed using CEQR guidelines for consistency and because NJ TRANSIT and the Port Authority of New York and New Jersey (PANYNJ) do not have an alternative guideline. The CEQR analysis guidelines were also used for NJ TRANSIT and other suburban buses that enter the Manhattan CBD. The same guidance was used to evaluate potential effects across all transit agencies. As detailed in Section 4C.2.3, the EA analyzed the effect of incremental passengers on rail and bus at the maximum load point. No individual bus routes would have increases of more than 50 new passengers in the AM peak hour in the representative tolling scenario, and no individual rail line would increase by more than 200 passengers. (Table 4C-24 indicates that the increase of 380 bus riders on routes entering the Manhattan CBD via the Lincoln Tunnel would be distributed across 104 routes.) Moreover, outside of the three major transfer hubs (Secaucus Junction Station, Hoboken Terminal, and Newark Penn Station), no transit station would see increases of over 200 passengers, the threshold under which there is no potential to result in adverse effects. The BPM's long-range 2045 analysis year assessment includes MTA Capital Program projects and projects programmed in the NYMTC Transportation Improvement Program. As noted in Chapter 4A, the 2045 transportation network for the No Action Alternative include the planned improvements documented in the Regional Transportation Plan, adopted in June 2017. See also response to Frequently Received Comment 26.

### 14901-25645

New Jersey is included in the detailed analysis of regional economic conditions in Chapter 6 of the EA. As described in Frequently Received Comment 1, reducing traffic congestion in the Manhattan CBD and investing in future transportation improvements in the MTA system are critical to the economic vitality of not only New York City, but the greater New York metropolitan region, including New Jersey. This has been recognized by Metropolitan Planning Organizations in New Jersey and is described in Chapter 5C "Social Conditions: Public Policy" of the EA. North Jersey Transportation Planning Authority's (NJTPA) plan, Plan 2050: Transportation, People, Opportunity, describes "severe congestion in some locations, hampering commerce and commuting, and causing growing safety and environmental concerns" as a key transportation challenge facing the region (source: North Jersey Transportation Planning Authority. September 2021. Plan 2050: Transportation, People, Opportunity. p. 1.). The plan highlights the need for congestion reduction in the New York and northern New Jersey metropolitan region to support existing, as well as future, transportation needs.



Lisa F. Garcia, Environmental Protection Agency Region 2, September 23, 2022 (Submission 14913)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 2  
290 BROADWAY  
NEW YORK, NY 10007-1866

September 22, 2022

Rick Marquis  
FHWA NY Division Administrator  
Federal Highway Administration  
Leo O'Brien Building  
11A Clinton Ave, Suite 719  
Albany, NY 12207

Ronald Epstein  
Executive Deputy Commissioner/CFO  
New York State Department of Transportation  
50 Wolf Road  
Albany, NY 12232

Allison L. C. de Cereño, Ph.D.  
Deputy Chief Operating Officer  
Metropolitan Transportation Authority  
2 Broadway, 23rd Floor  
New York, NY 10004

William Carry  
Assistant Commissioner for Policy  
NYC Department of Transportation  
55 Water Street, 9th Floor  
New York, NY 10041

RE: Draft Environmental Assessment- Central Business District Tolling Program, New York, NY

Dear Mr. Marquis, Mr. Epstein, Dr. de Cereño, and Mr. Carry,

In accordance with our responsibilities under Section 309 of the Clean Air Act and the National Environmental Policy Act (NEPA), the United States Environmental Protection Agency (EPA) has reviewed the Draft Environmental Assessment (EA) prepared by the Federal Highway Administration (FHWA or Lead Agency) in coordination with New York State Department of Transportation, and Metropolitan Transportation Authority (together referred to as Project Sponsors), for the Central Business District Tolling Program (CBDTP or the Project) in New York. The CAA Section 309 role is unique to EPA, providing EPA the authority to review and comment in writing on the environmental impact of any major Federal agency action and to make EPA's written comments available to the public.

EPA understands the purpose of the Project is to reduce traffic congestion in the Manhattan Central Business District (CBD), which encompasses the geographic area of Manhattan south of 60th Street, in a manner that will generate revenue for future transportation improvements. The Draft EA has been developed to address potential impacts associated with the CBDTP and the wider regional study area, which consists of twenty-eight counties where most of the trips to and from the CBD originate or terminate. EPA recognizes that congestion pricing has been used as a traffic reduction strategy and is anticipated to bring varied benefits to the CBD.

EPA focused its review on the preferred alternative, Zone-Based Pricing. EPA appreciates the opportunity to engage early with the Project Sponsors and continues to support a thorough NEPA public process as a cooperating agency on the Project. This Draft EA has incorporated EPA's feedback, most notably with respect to public accessibility and transparency, regarding expanded mesoscale and local air quality analyses. Furthermore, we commend FHWA for improving the clarity of some of the major findings by including an Executive Summary available in nine different languages and presenting information in tabular or visual formats for public engagement and understanding of the Project.

14913-25182

Due to the insufficiency of data in the Draft EA around localized and disproportionate air quality impacts in the surrounding area, EPA is unable to confirm that impacts are less than significant without appropriate mitigation. EPA remains concerned about the potential for adverse air quality impacts on communities in areas outside the CBD—e.g., Bronx County, Bergen County, and Richmond County—where the analysis in the Draft EA projects that traffic congestion will likely worsen due to Project implementation. EPA recommends that the analysis of these sensitive areas in the Draft EA be improved, and appropriate mitigation be identified to ensure adverse impacts are less than significant, especially given the historical environmental justice (EJ) concerns and cumulative impacts to the affected communities.

14913-25183

EPA recommends the Project Sponsors include more robust air quality modeling to assess localized Project impacts in areas of EJ concern which will inform development of mitigation measures. The Project Sponsors should also engage in more robust community outreach to consider mitigation. EPA recommends the Project Sponsors use data evaluated in the EA to include mitigation measures, rather than rely on post-implementation monitoring to inform mitigation decisions.

14913-25184

14913-25185

Addressing these issues is incumbent on the Lead Agency and Project Sponsors. In accordance with Executive Order 12898's mandate, federal agencies must "to the greatest extent practicable and permitted by law," make EJ part of their mission, "by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of [their] programs, policies, and activities." EO 14008 requires federal agencies to "make achieving environmental justice part of their missions by developing programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related, and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts."<sup>1</sup> In addition, the Council on Environmental Quality's NEPA EJ guidance states that agencies, among other things: i) "should consider the composition of the affected area, to determine whether [communities with EJ concerns] are present . . . and if so whether there may be disproportionately high and adverse human health or environmental effects . . ."; and ii) "should consider relevant public health data and industry data concerning the potential for multiple or cumulative exposure to human health or environmental hazards in the affected population and historical patterns of exposure to environmental hazards."<sup>2</sup> Finally, New York State's (the State) Climate Leadership and Community Protection Act (CLCPA), requires the State to address disproportionate impacts and reduce the burden to Disadvantaged Communities (DAC). Given the potential impacts identified in the Draft EA, and any future impacts not clearly identified, especially to communities with EJ concerns, EPA believes further investigation and analysis could lead to more thorough, comprehensive, and targeted mitigation measures from the Project.

EPA recommends that FHWA clarify and expand upon the following subjects in the Final EA and provide mitigation measures in accordance with EPA's enclosed detailed comments to better address: the alternatives analysis; direct, indirect, and cumulative impacts; impacts on communities with EJ concerns; and mitigation commitments to address significant adverse impacts during and after implementation of the proposed action. Based on the impacts disclosed and mitigation considered in the Draft EA, significant impacts to communities with EJ concerns must be appropriately mitigated to meet the requirement of the mitigated Finding of No Significant Impact (FONSI) pursuant to 40 CFR §1501.6(c). As discussed in our detailed comments, EPA has

<sup>1</sup> Executive Order 14008 on Tackling the Climate Crisis at Home and Abroad (Jan. 27, 2021).

<sup>2</sup> Council on Environmental Quality (CEQ) EJ Guidance Under NEPA (1997) pg. 9.



Lisa F. Garcia, Environmental Protection Agency Region 2, September 23, 2022 (Submission 14913)  
- Continued

14913-25185

determined that additional analysis should be conducted to identify mitigation measures to reduce disproportionate, significant impacts to communities with EJ concerns. Lead Agency and Project Sponsors should include concrete mitigation requirements as commitments in its decision document. EPA also recommends that FHWA make the draft FONSI available for public review.

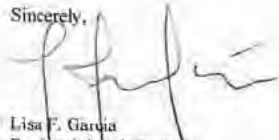
14913-25186

14913-25187

EPA has included in the detailed comments proposed methods to address mitigation. The Lead Agency and Project Sponsors should implement suggestions and proposed mitigation strategies introduced by representatives from communities with EJ concerns, the EJ Technical Advisory Group and the EJ Stakeholder Working Group throughout the scoping and public comment period. These suggestions address quality of life considerations that impact "human health, economic, and social effects of federal actions" as is required by NEPA by: reducing emissions and vehicle miles traveled; increasing alternative transportation options; and enhancing public and mass transit for all users while advancing green infrastructure in the New York Metropolitan Area.

EPA looks forward to a response from your team and an opportunity to review the final documents. We are committed to working with the Lead Agency and Project Sponsors through completion of the NEPA process. Should you have any questions or would like clarification, please contact David Kluesner, Director of EPA Region 2 Strategic Programs Office at [Kluesner.Dave@epa.gov](mailto:Kluesner.Dave@epa.gov) or (212) 637-3633.

Sincerely,



Lisa F. Garcia  
Regional Administrator  
US Environmental Protection Agency, Region 2

Enclosure

*[Page Left Intentionally Blank]*

Lisa F. Garcia, Environmental Protection Agency Region 2, September 23, 2022 (Submission 14913)  
- Continued

**United States Environmental Protection Agency Detailed Comments**  
*Draft Environmental Assessment*  
*Central Business District Tolling Program – New York, NY*

14913-25188

**Air Quality**

Based on our review of the Draft EA, EPA recommends that Project Sponsors fully disclose Air Quality impacts to the regional and local communities in the study area. Additionally, EPA recommends that air quality analyses should include the entire study area, especially those where traffic increases and pollutant increases are anticipated. EPA offers the following comments to consider:

14913-25189

- EPA recommends that the Project Sponsors to reduce potential increases in air pollution and other impacts from increased vehicle traffic through a comprehensive mitigation package for all scenarios under consideration. In considering impacts, the Project Sponsors must recognize and acknowledge that compliance with the National Ambient Air Quality Standards (NAAQS) does not equate to no potential impacts and localized harm to human health and the environment. Executive Order 14008 requires agencies to make achieving environmental justice part of their missions by developing programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related, and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts.<sup>1</sup> Air pollution contributes to a wide variety of adverse health effects. Numerous scientific studies have linked particle pollution exposure to a variety of problems [including premature death in people with heart or lung disease] ... [and increased asthma attacks].<sup>2</sup> For these reasons, the impacts of the Project's air emissions, specifically regarding increased truck traffic, need to be evaluated beyond EPA's public health air quality standards or benchmarks.
  - While EPA has issued formal designations as "attainment" or "nonattainment" regarding certain criteria air pollutants, these designations may not always be representative of all localized air quality impacts and resulting health disparities. For instance, previously unidentified "hot spots" that exceed the level of the PM<sub>2.5</sub> NAAQS may exist even in areas designated as attainment. The regional area impacted by the study is currently following a maintenance plan after previously having not attained the PM<sub>2.5</sub> NAAQS. Therefore, increased traffic or new traffic and pollution hotspots could threaten the regional area's current attainment status.
  - EPA encourages the Project Sponsors to complete an analysis of localized impacts in areas that may not meet the New York State Environmental Quality Review Act (SEQRA) criteria for adverse effects located in communities with EJ concerns to determine the potential impacts on existing air quality and subsequent public health.
- EPA appreciates the Project Sponsors' additional completion of three hot spot analyses (pg. 10-47) completed for the Draft EA based on previous discussions with the NEPA review team throughout the scoping process of the Project.
- The Draft EA analyzed 102 intersections (pg. 10-43) as part of the microscale hot spot screening analysis. These intersections are the same as those analyzed in the local intersection transportation analysis and were selected based on expected increases in traffic. EPA suggests the rationale for using these intersections for the microscale air quality screening analysis should be further clarified in the Final EA.

<sup>1</sup> Executive Order 14008 on Tackling the Climate Crisis at Home and Abroad (Jan. 27, 2021).

<sup>2</sup> <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm>.

14913-25191

- EPA recommends the Project Sponsors include a more expansive microscale screening analysis of intersections with an increase in traffic and additional intersections to encompass all local counties. This should include Richmond County and Bergen County, which show projected increases in air pollutants in both 2023 and 2045.
- EPA acknowledges that the microscale screening analysis (pg. 10-42) rules out the need for hot spot analysis. EPA notes that benefits in some areas do not mean that disproportionate adverse impacts do not occur elsewhere. All potential adverse impacts should be identified, explained, and analyzed, irrespective of benefits to other areas.
- Although Table 10-13 provides the results of the microscale screening, this table may be more beneficial if specific data or illustrative quantitative information is provided.

**Environmental Justice**

Based on our review of the Draft EA, EPA's comments regarding Environmental Justice (EJ) focuses on three key components:

14913-25192

1. **Tolling Impacts** – While the Draft EA acknowledges the disproportionate impact of tolling on communities with EJ concerns, EPA recommends that the Final EA and Draft FONSI include more sufficient mitigation methods to be implemented to ensure these impacts are less than significant.
2. **Localized Traffic Impacts** – The Draft EA does not identify the disproportionate impact of the circumferential traffic diversions to roadways in communities with EJ concerns and its subsequent impact on the air quality in particularly near road communities. EPA recommends the Final EA and Draft FONSI clearly identifies these impacts and sufficient mitigation to be implemented that ensures these impacts are less than significant.
3. **Cumulative Impacts** – In order to meet NEPA regulations,<sup>3</sup> cumulative impacts must be considered throughout the entirety of the Final EA, most notably in the chapter on Environmental Justice.

14913-25194

14913-25195

**Tolling Impacts**

- EPA recommends that the Project Sponsors pursue a toll policy that would waive all tolls upfront for low-income drivers residing both within and outside the CBD in addition to relying on tax credits. Waiving for an annual tax credit may present a hardship for many low-income drivers due to their inability to cover the costs of this new expense prior to recouping the expenses annually via tax credits. If waiving all tolls for low-income drivers is determined not practicable, EPA recommends developing a tiered approach for tolls that is dependent on income level.
- The Draft EA does not adequately address the identified disproportionate impact to low-income drivers residing outside the CBD. While a tax credit is proposed for low-income drivers residing within the CBD, this proposal excludes drivers residing outside the CBD. The United States Department of Transportation (DOT) Order 5610.2C states that "DOT officials will ensure that any of their respective programs, policies or activities that will have

14913-25196

<sup>3</sup> Effective May 20, 2022, CEQ updated the CEQ NEPA Implementing Regulations 40 CFR §1508.1 "Definition" to reinstate the definition of "cumulative effects" as a requirement for NEPA analysis. CEQ noted in the preamble that "the deletion of the definition of 'cumulative impacts' in the 2020 rule did not absolve agencies from evaluating reasonably foreseeable cumulative effects, and therefore, it is unclear that the deletion would narrow the scope of effects analyzed by agencies." (Federal Register Vol. 87, No. 78, page 23463).



# Lisa F. Garcia, Environmental Protection Agency Region 2, September 23, 2022 (Submission 14913) - Continued

14913-25196

a disproportionately high and adverse effect on minority populations or low-income populations will only be carried out if further mitigation measures or alternatives that would avoid or reduce the disproportionately high and adverse effect are not practicable." EPA recommends the Final EA be updated to discuss and identify appropriate mitigation to ensure impacts to drivers residing outside of the CBD is less than significant.

- Although mitigation is proposed to waive the \$10 E-Z Pass deposit fee and establish a bi-annual EJ Community Group, EPA believes these measures do not sufficiently address the potential costs associated from new tolls. EPA recommends developing proposed mitigation to adequately address this disproportionate impact. If there is no practicable mitigation that could address increased tolls to low-income residents outside the CBD, please state this clearly in the Final EA.

14913-25197

- EPA urges that the selected method for reduced tolling for residents and low-income drivers into the CBD should be widely advertised to ensure qualified populations are able to take advantage of these benefits.

14913-25198

- EPA recommends identifying which alternatives have the most and the least adverse impacts on communities with EJ concerns. EPA encourages the Project Sponsors to select a tolling scenario that minimizes adverse impacts to low-income and minority communities. Additionally, the Final EA should provide a thorough description of any adverse impacts to low-income and minority communities resulting from each of tolling scenarios being considered.

14913-25199

- EPA encourages the THWA or Lead Agency to consult with internal or external partners with expertise in socioeconomic impacts of tolling to conduct an independent review. Many claims are made throughout the Draft EA of the impact of tolling scenarios on economic conditions, particularly on communities with EJ concerns and low-income drivers.

14913-25200

## Localized Traffic Impacts

- EPA recommends the Lead Agency provide a comparative analysis of potential air quality impacts between the general population and minority communities and low-income populations throughout the study area. While local traffic volume comparisons were provided in Chapters 4a and 17, the air quality evaluation was only conducted at a county level. Communities with EJ concerns are already disproportionately impacted across cumulative environmental, health, socioeconomic and climate stressors. The Project may exacerbate the disproportionate impacts, and as such, EPA recommends the Final EA include further comparison as noted below.

- As Figures 17-7, 17-8, and 17-9 display, there are considerable increases in Roadway Vehicle-Miles Traveled (VMT) in and adjacent to tracts identified as communities with significant EJ concerns.
- Traffic diversion may result in continued or increased air pollution in many residential neighborhoods along the East River, including in communities with EJ concerns, like the South Bronx and Washington Heights. All tolling scenarios suggest a potential increase in vehicle and truck traffic in some areas outside the CBD tolling areas. In some scenarios, the South Bronx could see as much as an additional 700 truck trips per day (p. 4A-42). Increases were also found to impact neighborhoods in Richmond County, NY and Bergen County, NJ. Projected benefits for the CBD are not expected to offset these impacts in outside areas (p. 4A-30).

14913-25201

- EPA recommends the Project Sponsors adequately identify adverse impacts to populations with EJ concerns. We appreciate the detailed modeling conducted for ten highway segments most likely to experience an increase in traffic (see Section 17.6.1.1 and Table 17.3).

14913-25201

However, the EA states that all ten segments analyzed are within or adjacent to EJ census tracts. Furthermore, eight of the ten segments would result in increased delays and queues in peak hours and three of the segments would constitute adverse effects on traffic conditions according to SEQRA impact criteria. These identified adverse traffic congestion impacts appear to be predominantly borne by communities of color or low-income populations (given all identified increases occur within or adjacent to communities with EJ concerns). Additionally, at a minimum, the three segments meeting SEQRA impact criteria appear to be appreciably greater in magnitude than the congestion impacts experienced by the general public.

- The Draft EA states that "Traffic modeling for the Project indicates that the CBD Tolling Alternative would result in some traffic diversions around Manhattan, into the Bronx and northern New Jersey and Staten Island in all tolling scenarios. These circumferential diversions are due to implementation of the tolling in the Manhattan CBD, as drivers and trucks traveling to and from Long Island and Pennsylvania would divert around Manhattan to avoid the tolling in the Manhattan CBD" (p. 17-29). The Draft EA also states that "...environmental justice communities experiencing the largest increases in traffic volumes, including trucks, from circumferential diversions would be along I-95 in northern New Jersey and in Queens at the approach to the Robert F. Kennedy Bridge" (p. 17-31).
  - EPA recommends the Project Sponsors clearly identify the increased traffic congestion in these highway segments as disproportionately high and adverse to communities of color and low-income populations as well as commit to implementation of measurable mitigation measures to address these impacts that will be shouldered primarily by communities with EJ concerns.

14913-25202

- Project Sponsors should incorporate community and workgroup feedback such as prioritizing the servicing of zero-emission buses in areas of significant EJ concerns that would be adversely impacted by the Project. While EPA recognizes this ongoing effort as part of MTA's 2020-2024 capital program, EPA encourages MTA to partner with other public and private mass transit bus entities to expand benefits throughout the entire study area, beyond the CBD.

14913-25203

## Cumulative Impacts

- Consideration of cumulative impacts is foundational to an EJ analysis. CEQ's EJ Guidance lists cumulative impacts as one of a handful of factors agencies should consider when determining whether an impact is disproportionately high and adverse. EPA recommends that the Project Sponsors provide more detailed analysis of cumulative effects in accordance with definition from CEQ updated NEPA Implementing Procedures (40 CFR § 1508.1(g)(3)). Executive Order 14008 clarified the importance of considering cumulative impacts: "Agencies shall make achieving EJ part of their missions by developing programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts." Executive Order 12898 Section 2-301(b) provides that whenever practicable and appropriate, the environmental human health analyses shall identify multiple and cumulative exposures.
  - It is unclear whether or to what extent cumulative impacts were considered during the EJ analysis for air and other potential impacts to communities with EJ concerns. Several communities within the study area are already experiencing adverse and disproportionately high human health effects. A more robust analysis of impacts would clarify whether the Project would add to these disproportionately high health effects.



Lisa F. Garcia, Environmental Protection Agency Region 2, September 23, 2022 (Submission 14913)  
- Continued

- 14913-25203
- EPA recommends that the Final EA further analyze cumulative impacts in communities with EJ concerns to determine the potential for significant adverse impacts and identify appropriate mitigation to ensure impacts are less than significant.
- 14913-25204
- EPA appreciates the ongoing inclusion of the EJ Technical Advisory Group (EJ TAG) to continue months after implementation of the proposed action. We recommend that the Project Sponsors commit to a schedule for consulting the working group, sharing results from monitoring conducted after implementation, and using feedback from these meetings to influence changes to the program as needed in the EA. The sponsors should also allow for public comment on any future or new projects that address impacts beyond the Final EA.
    - EPA recommends the EJ TAG meet to address substantive EJ concerns during tolling scenario selection, implementation, and after implementation of an action. EPA further recommends the EJ TAG meet on a quarterly basis to track and communicate progress.
    - EPA encourages the Project Sponsors to provide opportunities for the EJ TAG to participate in discussions of actual impacts during the monitoring period and provide opportunities for the public to provide first-hand accounts of observed impacts. These commitments and accountability measures should also be clearly outlined in the EA.
    - EPA recommends the Project Sponsors create an interagency working group in tandem with the ongoing EJ Technical Advisory Group (TAG) to implement potential projects that arise from mitigation be created to provide a holistic planning approach to address community-identified needs.
  - EPA recommends the Project Sponsors consult with existing groups at the federal and local levels that currently work to address impacts of traffic on communities with EJ concerns. Collaboration with federal and local agencies will permit for a visible and accurate portrayal of the air quality impacts seen by the Project as well as arriving at solutions that address the full range of impacts and have the full support of the whole of government to meet EO directives and CEQ guidance.
    - For example, Project Sponsors should consider incorporating monitoring results captured by the New York State Department of Environmental Conservation's 2022-23 Statewide Community Air Monitoring Initiative where through a contract with Adima will be measuring air pollution from sources such as cars, diesel trucks, construction equipment, commercial sources and industrial facilities. The EJ TAG can assist in identifying and defining specific areas for monitoring.
- 14913-25205
- 14913-25206
- As discussed above, EPA recommends the Project Sponsors consider Air Quality impacts and its effects on existing health disparities, including asthma at additional intersections in communities with EJ concerns. Based on existing toxics levels and information from EJScreen, these impacts may be disproportionate. Modeling by the Lead Agency and Project Sponsors should be used to identify and propose direct mitigation to address potential impacts.
  - EPA recommends that the Final EA clearly discuss how relevant existing conditions in communities with EJ concerns across cumulative environmental, health, socioeconomic and climate stressors were considered when determining whether impacts are disproportionately high and adverse. Table 17-11 states the Bronx, Richmond, and Bergen Counties are all projected to experience increases from the CBD tolling alternatives for criteria pollutants and MSATs in the Year 2023 and the Year 2045. EPA's EJScreen tool and NYC's Environmental and Health Data Portal indicates numerous Block Groups (BGs) in these areas that may already be heavily overburdened from the types of impacts relevant to the

- 14913-25206
- project, including the following based on EJ percentiles compared to other BGs across the nation:
- Bronx County BG 360050051(X)2:
    - 97th% PM 2.5
    - 99th% diesel PM
    - 98th% air toxics cancer risk
    - 99th% air toxics respiratory hazard index
    - 95th% traffic proximity
  - Richmond County BG 360850040002:
    - 98% PM2.5
    - 99% diesel PM
    - 98% air toxics cancer risk
    - 98% air toxics respiratory hazard index
    - 97% traffic proximity
  - Bergen County BG 340170145013:
    - 96% PM2.5
    - 96% diesel PM
    - 98% air toxics cancer risk
    - 98% air toxics respiratory hazard index
    - 96% traffic proximity
- 14913-25207
- EPA recommends the Project Sponsors consider using applicable tools common to the health impact assessment process as part of the monitoring and mitigation plan including in the FONSI, to better identify the intensity of impacts on specific communities already experiencing significant stressors to human health, identify and implement appropriate mitigation to ensure impacts are less than significant, and monitor the effectiveness of the mitigation measures.
- 14913-25208
- Certain communities within the regional study area have existing stressors that need to be considered in identifying mitigation to ensure impacts are less than significant. Each of the three block groups discussed above have been denied services through the discriminatory practice of redlining as they were classified as "D-Hazardous" in the Homeowners' Loan Corporation neighborhood ranking system. The Bronx and East Harlem bear the greatest disproportionate impacts in New York City with respect to asthma rates in both children and adults, including other health outcomes.
    - The pediatric rates (estimated annual rate per 10,000 residents) of asthma emergency department visits and hospitalizations in the Bronx are 416.5 and 52.7 respectively.
    - In East Harlem, the pediatric rates of asthma emergency department visits and hospitalizations are 485.3 and 52.2.
    - Richmond County also bears asthma disparities for both adults and children. The pediatric rates of asthma emergency department visits and hospitalizations are 157.5 and 29.9 respectively. Additionally, in Richmond County the asthma rate is 90 among public school children ages 5 to 14 years of age.
- 14913-25209
- NYS's Climate Leadership and Community Protection Act (CLCPA), requires the State to address disproportionate impacts and reduce the burden to Disadvantaged Communities (DAC). The Project Sponsors (of a New York State project) should comply with the CLCPA in an effort to reduce the impacts from climate change while increasing benefits to DAC and communities with EJ concerns and identify conditions for compliance in the FONSI.
- 14913-25210
- EPA understands the Project Sponsors describe the overall benefits of the CBDTP as outweighing the impacts. However, the benefits and costs are unevenly distributed, with some costs falling disproportionately on overburdened communities. EPA recommends that



Lisa F. Garcia, Environmental Protection Agency Region 2, September 23, 2022 (Submission 14913)  
- Continued

14913-25210	the Project Sponsors thoroughly evaluate claims that the Project benefits outweigh impacts. EPA recommends that Project Sponsors look at all potential impacts in detail and support their claims with both local and regional justification. EPA is concerned that the Draft EA relies on potentially dated and inaccurate data around future modal shifts.	14913-25218	<ul style="list-style-type: none"><li>• The Draft EA states that MTA is currently transitioning its fleet to zero-emission buses and is committed to prioritizing traditionally underserved communities and those impacted by poor air quality and climate change in the deployment of these vehicles. EPA recommends that FHWA include a commitment in the FONSI that deployment of zero-emission buses will be prioritized to traditionally underserved communities and NYS designated Disadvantaged Communities that will be impacted by increased traffic, in particular increased truck traffic, by the Project.</li></ul>
14913-25211	<ul style="list-style-type: none"><li>□ EPA recommends that the Final EA include standardized data to reflect the impact of the COVID-19 pandemic on modes of transportation within and outside of the CBD.</li><li>□ We recognize that the COVID-19 pandemic has now been ongoing for over two years and assessments can and have been made regarding work from home policies, remote learning capabilities and other impacts on transportation within and outside of the CBD.</li></ul>	14913-25219	<ul style="list-style-type: none"><li>• EPA recommends the Project Sponsors incorporate Project design elements that were not carried forward as reasonable alternatives as design elements or mitigation measures to ensure that impacts do not cause significant effects on the human environment.<ul style="list-style-type: none"><li>□ "Agencies may consider stating in the NEPA document that an alternative developed from the elements of the other alternatives may be considered. In this case, the alternatives may be structured to enable comparison of key elements across the alternatives (e.g., a modular analytic approach)" (<i>NEPA Promising Practices</i>, Section 4.3, p. 18).</li></ul></li></ul>
14913-25212	<b>Mitigation</b> While EPA supports the purpose and need of congestion pricing, we encourage the Project Sponsors to ensure the preferred alternative equitably minimizes adverse impacts across the entire study area. CEQ regulations define mitigation as "measures that avoid, minimize, or compensate for effects caused by a proposed action or alternatives as described in an environmental document or record of decision and that have a nexus to those effects" (40 CFR § 1508.1(g)(3)). EPA recommends the Project Sponsors consider proposed comprehensive mitigation packages particularly focused on reducing impacts to areas with EJ concerns for each tolling scenario, or at a minimum for the ones being seriously considered. EPA's key recommendations for mitigation in a FONSI include:	14913-25220	<ul style="list-style-type: none"><li>• EPA recommends that the Project Sponsors and Lead Agency incorporate suggestions for mitigation provided by community groups and EJ stakeholders. Several examples of these suggestions include: installing green infrastructure components to reduce pollution and extreme heat; promoting the electrification of trucks including at the Hunts Point Market; equitable deployment of zero-emission buses; and advancing regional strategies to move towards renewable energy.<ul style="list-style-type: none"><li>□ EPA recommends commitments to mitigation also be documented in a Community Benefit Agreement to strengthen commitments to the community.</li></ul></li></ul>
14913-25213	<ol style="list-style-type: none"><li>1. <b>Clarify Monitoring Strategy</b> – EPA recommends the Project Sponsors specifically articulate in their monitoring plans the thresholds of significant and adverse impact that would trigger implementation of mitigation to ensure impacts are less than significant.</li><li>2. <b>Communicate Commitments</b> – EPA recommends that proposed monitoring plans commit to clear mitigation measures with timelines, how each of the measures would be implemented, and the expected reduction in significant and adverse impacts that would be realized after implementation.</li></ol>	14913-25221	<ul style="list-style-type: none"><li>• The Promising Practices for EJ Methodologies in NEPA Reviews (2016) report recommends developing an adaptive management plan and conducting implementation and effectiveness monitoring when mitigation measures are proposed to address impacts to minority and low-income populations. By using effectiveness monitoring, an agency and community can learn if the mitigation measures are providing the predicted outcomes. An adaptive management plan can provide agencies with a means for taking corrective action if mitigation implementation or effectiveness monitoring indicates the measures are not achieving the intended outcomes.<ul style="list-style-type: none"><li>□ As described above, the recommended interagency working group to address actions that are proposed by the EJ TAG could utilize this methodology in its approach to implement appropriate mitigation of impacts identified by ongoing monitoring data.</li></ul></li></ul>
14913-25214	<ul style="list-style-type: none"><li>• According to Table 16-1, the Project Sponsors will conduct monitoring programs and implement potential mitigation measures if thresholds are exceeded. However, it is unclear how the described mitigation measures would improve impacts to resource areas or what potential adverse impacts might arise from implementation of such measures. Further information about these mitigation measures and their ability to decrease impacts from the tolling program should be included in the Final EA.</li></ul>		
14913-25215	<ul style="list-style-type: none"><li>• As mentioned earlier, in conducting this monitoring project EPA recommends mitigating for all impacts and increases in VMTs or truck traffic beyond compliance with the Clean Air Act NAAQS thresholds.</li></ul>		
14913-25216	<ul style="list-style-type: none"><li>□ Transportation Demand Management measures are discussed as an option to be implemented if monitoring shows adverse impacts after implementation of a tolling scenario. EPA requests the Project Sponsors specifically articulate thresholds of significant and adverse impact that would trigger potential mitigation measures, how each of the measures would be implemented, and the expected reduction in adverse impacts that would be realized after implementation.</li></ul>		
14913-25217	<ul style="list-style-type: none"><li>• EPA recommends that commitments currently described as "enhancements" that require monitoring should be included in a monitoring plan, not as mitigation. EPA recommends that data gathered from the monitoring plan be provided in an easily accessible format for public review.</li></ul>		

## Response to Lisa F. Garcia, Environmental Protection Agency Region 2, September 23, 2022 (Submission 14913)

**14913-25180**

Comment noted.

**14913-25181**

Comment noted.

**14913-25182**

To supplement the air quality analyses presented in the EA, and in coordination with FHWA and EPA, additional research was undertaken to broaden the analysis, and additional commitments are now included. See the Technical Memorandum, Appendix 17D, "Environmental Justice," as well as the response to Frequently Received Comment 39 for more details .

**14913-25183**

See response to previous comment.

**14913-25184**

In addition to the analyses noted in the response to Comment 3, the Project Sponsors also undertook additional meetings with the Environmental Justice Technical Advisory Group (EJTAG) to refine several mitigation and enhancement measures already included in the EA and to develop new commitments. See response to Frequently Received Comment 39 for information on new commitments.

**14913-25185**

For certain topics of potential effect, mitigation will be implemented if monitoring demonstrates the need to mitigate. For these topics, the Project Sponsors have provided more clarity for when monitoring will begin and the specific thresholds that would trigger mitigation in Chapter 16 "Summary of Effects." For other areas, as identified in Chapter 16 and response to Frequently Received Comment 39 , the Project Sponsors make commitments (without advance monitoring) should approval for the project be granted. Also, see Technical Memorandum, Appendix 17D, "Environmental Justice" for additional analysis and clarification.

**14913-25186**

FHWA and the Project Sponsors will follow the applicable regulations in determining the process for the decision document.

**14913-25187**

The Project Sponsors conducted public outreach prior to the release of the EA, including nine webinars to engage with environmental justice populations. In addition, FHWA and the Project Sponsors also provided smaller meetings in the form of a technical advisory group (EJTAG) and a stakeholder working group (EJSWG) to further engage with environmental justice populations. As detailed in Chapter 17 of the EA, the Project Sponsors invited 37 community leaders, advocacy groups, industry groups, and community members from the regional study area with expertise in environmental justice considerations to participate in the EJTAG, of which 16 groups accepted the invitation. In addition, the Project Sponsors established the EJSWG, which comprised interested members of the public with a focus on environmental justice concerns. Representatives from these groups attended multiple meetings beginning in October 2021. In both groups, the agendas for these meetings were largely driven by the participants while the Project Sponsors listened and provided answers to questions. Based on feedback and concerns raised during public outreach related to environmental justice, including feedback from the EJTAG and EJSWG, the Project Sponsors undertook additional analyses and developed additional commitments which were incorporated into the Final EA. See also, response to Frequently Received Comment 12 and Comment 39 as well as the Technical Memorandum, Appendix 17D, "Environmental Justice."

**14913-25188**

Please see Frequently Received Comment 35 for information about the Project's effects on air quality. In subsequent discussion with US EPA, the FHWA and Project Sponsors understood that additional information on the methodology and on health effects associated with traffic-related pollutants was desired. Please refer to the Technical Memorandum, Appendix 17D, "Environmental Justice," for more information.

**14913-25189**

See the Supplemental Information in the Technical Memorandum, Appendix 17D, "Environmental Justice," as well as response to Frequently Received Comment 39.

## Response to Lisa F. Garcia, Environmental Protection Agency Region 2, September 23, 2022 (Submission 14913) - Continued

**14913-25190**

Comment noted.

**14913-25191**

The 102 intersections selected for analysis were deemed to have the greatest potential for increased traffic for certain tolling scenarios based upon an evaluation of diversions using the BPM. These intersections are generally located at or near the approaches to tunnels and bridges crossing into the Manhattan CBD, as well as along certain circumferential diversion routes. While the regional analysis identified the potential for VMT increases in certain counties, most of the increase would occur on highways. Increases at highway entry and exit points would be widely dispersed and the effect on specific intersections would be very small and does not warrant more detailed analysis. The most conservative tolling scenario had a maximum of 50 out of 365 instances of potential intersection impacts. Each instance represents a traffic volume increase of 50 or more vehicles (based on CEQR screening guidance) during one of the peak hour periods (i.e. am, midday, pm or overnight). Because many of the 102 intersections selected also receive traffic from facilities that would have reduced traffic under the CBD Tolling Program, most intersections would have a net reduction in traffic. However, in order to be conservative, all 102 intersections analyzed for potential traffic effects were included in the microscale air quality screening analysis regardless of the change, if any, in traffic volumes. With respect to request for a more expansive microscale intersection screening analysis, there were four intersections in Jersey City approaching the Holland Tunnel that were originally included in the intersection analysis, but were later excluded since traffic volumes at the Holland Tunnel would be lower under all tolling scenarios during all time periods. With respect to circumferential diversions to New Jersey via the Verrazzano Narrows Bridge and George Washington Bridge, traffic would be expected to stay on the highways and would be utilizing multiple on/off ramps. Similarly, Staten Island traffic diverting to the Bayonne Bridge would also use multiple entry/exit points along the major highways. Therefore, because traffic would be dispersed along multiple entry/exit points along highways, the potential traffic effects at any single intersection would be expected to be small. For these reasons, a more expansive microscale screening analysis at intersections was deemed not necessary. As discussed in Section 10.3.2.2, all intersections passed the screening criteria. As such, no adverse air quality effects are expected. Details of the screening analysis, including the screening tables for CO and PM organized by the locations identified in Table 10-13, are contained in Appendix 10B. For further analysis of potential disproportionate adverse air quality effects on environmental justice populations already overburdened by pollution and chronic disease, see the Technical Memorandum,



## Response to Lisa F. Garcia, Environmental Protection Agency Region 2, September 23, 2022 (Submission 14913) - Continued

**14913-25191**

Appendix 17D, “Environmental Justice.” The EA, Page 10-13 contains county-level VMT data, whereas Section 10.3.2.2 contains the microscale screening analysis. Section 10.3.2.2 (beginning on page 10-42) discusses the screening criteria and results (all intersections passed the screening criteria). Details of the screening analysis, including the screening tables for CO and PM organized by the locations identified in Table 10-13, are contained in Appendix 10B.

**14913-25192**

See response to Frequently Received Comment 39.

**14913-25193**

See the supplemental information in the Technical Memorandum, Appendix 17D, “Environmental Justice.”

**14913-25194**

See the Technical Memorandum, Appendix 17D, “Environmental Justice,” as well as Chapter 17, “Environmental Justice” of the Final EA.

**14913-25195**

See response to Frequently Received Comment 18 as well as response to Frequently Received Comment 39.

**14913-25196**

See response to Frequently Received Comment 39.

**14913-25197**

See response to Frequently Received Comment 37.

**14913-25198**

The different scenarios presented in the EA would have different outcomes and, therefore, different effects on different communities. As detailed in Chapter 2, “Project Alternatives” of the EA, when considering the effects of various parameters other than the toll rate—such as crossing credits, peak periods, and exemptions and caps for taxis and FHV drivers or other vehicles—it is important to understand that these would not be applied in isolation from setting the toll rate. One of the four objectives of the Project is to create a funding source for capital improvements and generate sufficient annual net revenues to fund \$15 billion for capital projects for the MTA Capital Program. As a result, the more vehicles that are given crossing credits, exemptions, etc., the higher the toll must be to ensure sufficient revenues are generated, which in turn would lead to additional diversions and other resultant effects. For example, exempting taxi and FHV drivers would benefit taxi and FHV drivers and passengers who are part of environmental justice communities, but these exemptions would result in higher tolls for other vehicles. These higher tolls would in turn increase diversions through environmental justice communities and non-taxi/FHV drivers would pay more. For further details see Chapter 2, “Summary of Effects” and Chapter 17, “Environmental Justice” of the Final EA. See also, Frequently Received Comment 15.

**14913-25199**

TBTA relied on the expertise of their independent environmental consulting team, which includes team members with expertise in socioeconomic impacts, for the analyses in the EA. In recognition of the concerns of the effects of the Project, if the Project is approved, the Project Sponsors have committed to establishing a Small Business Working Group and an Environmental Justice Community Group. The purpose of these groups will be to share information about the implementation of the Project, findings from evaluating the effects of the Project, and to solicit ongoing input on how businesses and communities are being affected. Both groups would have their first meeting six months prior to Project implementation. For further information see response to Comment 39.

**14913-25200**

See the supplemental information provided in the Technical Memorandum, Appendix 17D, “Environmental Justice,” as well as response to Frequently Received Comment 35 and Frequently Received Comment 39.

## Response to Lisa F. Garcia, Environmental Protection Agency Region 2, September 23, 2022 (Submission 14913) - Continued

### **14913-25201**

See the supplemental information provided in the Technical Memorandum, Appendix 17D, "Environmental Justice," as well as response to Frequently Received Comment 35 and Frequently Received Comment 39.

### **14913-25202**

See Comment Response 25187, as well as response to Frequently Received Comment 39.

### **14913-25203**

See the supplemental information provided in the Technical Memorandum, Appendix 17D, "Environmental Justice," as well as response to Frequently Received Comment 39.

### **14913-25204**

The Project Sponsors commit to ongoing discussions with an Environmental Justice Community Group. The EA noted that the Project Sponsors will meet with the Environmental Justice Community Group on a bi-annual basis, with the first meeting six months after Project implementation. As can be seen in the Final EA, Chapter 16 "Summary of Effects," the Project Sponsors have modified this as follows: the Group will meet quarterly with the first meeting taking prior to Project implementation. Further, the Project Sponsors commit to having the EJTAG involved in determining where additional air monitors are located.

### **14913-25205**

The Project Sponsors did reach out to New York State Department of Environmental Conservation (NYSDEC) regarding their air monitoring initiative to ensure that there is no duplication and that the information that is generated by both efforts will be shared. The NYSDEC and other agencies conducting monitoring will continue to be consulted with by the Project Sponsors prior to finalizing the monitoring approach.

### **14913-25206**

See the Technical Memorandum, Appendix 17D, "Environmental Justice."

### **14913-25207**

See the Technical Memorandum, Appendix 17D, "Environmental Justice."

### **14913-25208**

See the Technical Memorandum, Appendix 17D, "Environmental Justice."

## Response to Lisa F. Garcia, Environmental Protection Agency Region 2, September 23, 2022 (Submission 14913) - Continued

### 14913-25209

The Climate Leadership and Community Protection Act (CLCPA), which became law in July 2019, establishes a comprehensive climate policy for New York State. The act requires that the State of New York reduce greenhouse gas emissions to 85 percent below 1990 levels by 2050 and offset the remaining 15 percent, establishing a “net-zero” economy.

As set forth in Chapter 10, “Air Quality” of the EA, by reducing congestion in the Manhattan CBD and reducing VMT within the region, the Project would reduce pollution from particulate matter and other mobile source pollutants. This would consequently reduce greenhouse gas emissions and improve air quality throughout the region. Although traffic diversions to certain highways would result in slight increases in pollutant levels adjacent to those highways, these increases will not cause exceedances of NAAQs or result in adverse effects. Therefore, this Project, including the commitments established in the Final EA, is consistent with the CLCPA.

The CLCPA requires that state agencies and authorities, when issuing administrative approvals and decisions, not disproportionately burden “Disadvantaged Communities” identified by the Climate Justice Working Group and prioritize reductions of greenhouse gas emissions and co-pollutants in those communities. CLCPA §7(3). The Climate Justice Working Group released a draft list of Disadvantaged Communities to which this provision applies in 2021, and the final list of “Disadvantaged Communities” (by census tract) for all of New York State in March 2023. The criteria used to identify Disadvantaged Communities include climate change risks, and are different from the criteria used to identify environmental justice communities. Further, the Disadvantaged Communities are only relevant to New York State counties. Thus, the list of Disadvantaged Communities for the Project’s environmental justice study area differs somewhat from the environmental justice communities identified in the EA.

Of the New York census tracts in the final list of Disadvantaged Communities located within the environmental justice study area for the EA, 955 of 1,002 are also identified as environmental justice communities in the EA, Chapter 17, “Environmental Justice.”

In other words, 47 Disadvantaged Communities census tracts were not identified as environmental justice census tracts, though many of them are within the same

### 14913-25209

communities as environmental justice census tracts. (Of note, the environmental justice analysis in the EA includes 776 New York census tracts that are not designated as Disadvantaged Communities.)

With respect to the 47 Disadvantaged Communities census tracts that are not environmental justice census tracts in the environmental justice study area:

- 44 are within the broader communities for which current environmental and health burdens were discussed in the Final EA, and for which traffic and/or truck traffic effects were assessed where relevant.
- 3 are within communities not addressed initially; however, further review indicates that one of those would experience a benefit (reduced traffic), and the other two would experience no change in traffic effects, under all tolling scenarios.

After toll rates are set, a process that includes additional analyses, inclusive of the communities in the final list of Disadvantaged Communities, as well as community input, will take place to determine the sites of the “placed-based” mitigation identified in Appendix 17D, “Technical Memorandum.” For further information on commitments made by the Project Sponsors, see response to Frequently Received Comment 39.

### 14913-25210

See the Technical Memorandum, Appendix 17D, “Environmental Justice.”

### 14913-25211

See response to Frequently Received Comment 7 and Frequently Received Comment 8.

### 14913-25212

See response to Frequently Received Comment 39, as well as Chapter 16, “Summary of Effects.”

## Response to Lisa F. Garcia, Environmental Protection Agency Region 2, September 23, 2022 (Submission 14913) - Continued

### **14913-25213**

The Project Sponsors will work with New York City Department of Health and Mental Hygiene (DOHMH) to expand the New York City Community Air Survey (NYCCAS), a network of air monitors located throughout the City. The pollutants currently measured by the NYCCAS include nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>), ozone, fine particulates (PM<sub>2.5</sub>), and black carbon (BC). These are products of vehicle exhaust, among other sources. The Project Sponsors will fund an expansion of this program, including the addition of several real-time PM monitors, along corridors of potential project impact from increased truck traffic. This includes portions of the Cross-Bronx Expressway, the Trans-Manhattan Expressway, the Long Island Expressway, the Brooklyn-Queens Expressway, approaches to the Robert F Kennedy Bridge, and the Staten Island Expressway. After baseline data collection begins, the Project Sponsors will develop appropriate thresholds for mitigation in consultation with DOHMH, Environmental Justice Community Group, NYSDEC, and USEPA. For the year after Project Implementation, data will be shared as it becomes available and analysis is completed, and reviewed on a quarterly basis with the same group. Please refer to Chapter 16, "Summary of Effects," for more clarity related to mitigation measures previously proposed. See also, response to Frequently Received Comment 39 .

### **14913-25214**

Please see the response to Comment 25213.

### **14913-25215**

See response to Frequently Received Comment 39.

### **14913-25216**

Please refer to Chapter 16, "Summary of Effects," for more clarity related to mitigation measures previously proposed. See also, response to Frequently Received Comment 39 .

### **14913-25217**

The enhancements in the EA included: 1. Expanding the network of sensors to monitor air quality; 2. to prioritize the Kingsbridge and Gun Hill Depots for bus electrification; and 3. ongoing monitoring and reporting of potential effects. These have been updated as noted in Chapter 16, "Summary of Effects" and additional information on the Project Sponsors' approach to implementing these commitments has also been newly included. The Project Sponsors commit to ongoing monitoring and reporting of potential effects on the Project on the project website in open data format to the greatest extent practicable.

### **14913-25218**

As stated in the EA, the MTA is committed to prioritizing the deployment of zero emissions vehicles received from the next major procurement of over 400 battery electric buses to environmental justice communities, beginning with the Kingsbridge Depot and Gun Hill Depot in the Bronx. Both depots operate bus routes that serve environmental justice communities in the South Bronx which may experience increased traffic due to the Project. Zero emissions buses will be assigned to routes serving these communities as soon as the buses are received and approved for service, beginning in 2025. The MTA is committed to a zero-emission bus fleet by 2040. By converting the MTA bus fleet to 100 percent zero emissions vehicles, the MTA will prevent over 335,000 metric tons of greenhouse gasses that would be emitted from an all-diesel bus fleet. Deployment of zero emissions buses is being prioritized to environmental justice communities first. The 2020-2024 MTA Capital Program includes \$1.1 billion in funding to buy 500 zero-emission buses and build charging infrastructure at 11 of the 28 depots where the MTA stores and maintains its bus fleet. Of these 11, nine are located within, or entirely surrounded by, environmental justice communities, and transit bus routes primarily benefit these neighborhoods. It is important to note that modifications that would allow for the deployment of electric buses to West Farms Depot, which is located closer to the South Bronx, are on hold through 2030. A significant portion of the West Farms Depot serves as a staging area for the Bruckner Expressway Reconstruction and Ramps project, a \$1.7 billion project being carried out by the New York State Department of Transportation. NYSDOT's Bruckner reconstruction and ramps installation project, as well as MTA's commitment to the deployment of zero emissions vehicles to other depots in the Bronx, will provide air quality benefits to environmental justice communities across the borough .



## Response to Lisa F. Garcia, Environmental Protection Agency Region 2, September 23, 2022 (Submission 14913) - Continued

### 14913-25219

The purpose of the CBD Tolling Program is to reduce traffic congestion in the Manhattan CBD in a manner that would generate revenue for future MTA Capital Program transportation improvements. However, although the preliminary alternatives outlined in Chapter 2, "Project Alternatives" of the EA do not meet all of the Program's objectives, they are not mutually exclusive and, therefore, are not precluded from being implemented. Also, see response to Frequently Received Comment 2 for alternatives to reducing congestion, and response to Frequently Received Comment 39 for more on Project commitments.

### 14913-25220

See response to Frequently Received Comment 39 for information on commitments made by the Project Sponsors based on input from the public and EJTAG. Additional information on the Project Sponsors' approach to implementing commitments has also been newly included in the Final EA, Chapter 16, "Summary of Effects."

### 14913-25221

As detailed in the EA, the Project Sponsors will implement monitoring plans prior to Project implementation, as well as post-implementation data collection. The Project Sponsors will evaluate the monitoring results to determine Project effects and whether adjustments to the commitments in the EA are merited. If adjustments are instituted, the same process for monitoring and adjusting would continue through the post-implementation monitoring period. In this way, the method we will be employing for monitoring and adjusting commitments is a form of adaptive management. See response to Comment 34 regarding details of the proposed air quality monitoring plan, as well as response to Frequently Received Comment 39.

## Francis Pickering, WestCOG, September 9, 2022 (Submission 14193)

**Western Connecticut**  
COUNCIL OF GOVERNMENTS

September 9, 2022

CBD Tolling Program  
2 Broadway, 23<sup>rd</sup> Floor  
New York, NY 10004FHWA - NY Division  
RE: CBDTP  
Leo W. O'Brien Federal Building  
11A Clinton Ave, Suite 719  
Albany, NY 12207

Via e-mail to:

[CBDTP@mtabt.org](mailto:CBDTP@mtabt.org)[CBDTP@dot.gov](mailto:CBDTP@dot.gov)

Dear Sir or Madam:

The Western Connecticut Council of Governments, which represents eighteen municipalities and hosts the South West Region and Housatonic Valley Metropolitan Planning Organizations (MPOs), has reviewed the draft *Environmental Assessment for the Central Business District (CBD) Tolling Program*.

WestCOG has identified several concerns, substantive and procedural, with the draft Environmental Assessment (EA). These concerns, which begin on page 2 of this letter, include the potential for significant impact to locations in the Western Connecticut Planning Region that were not considered during the development of the Environmental Assessment.

Given the probability of significant impacts, the potential regional implications of the project, and the apparent possibility of additional, viable alternatives, a full Environmental Impact Statement may be warranted.

WestCOG looks forward to resolution of the concerns identified and to full engagement of partners across the Study Area.

Should you have questions, please do not hesitate to contact me by e-mail at [fpickering@westcog.org](mailto:fpickering@westcog.org).

Sincerely,

Francis R. Pickering  
Executive Director

1 Riverside Road, Sandy Hook, CT 06482

Visit us online at [westcog.org](http://westcog.org)  
Telephone/fax 475-323-2060

14193-25466

**Alternatives Screening Process**

It appears that the screening of initial alternatives was not neutral but was preferentially biased to the CBD Tolling Alternative (Action Alternative). The draft EA notes that at least one other alternative would satisfy the Project purpose, need, and objectives. Specifically, alternative T-2, which would toll the East and Harlem River Bridges. Per Table ES-1, note 4 (pp. ES-8, 9):

*"Earlier studies showed this alternative would reduce congestion and could raise toll revenues equivalent to project objectives. However, there is no law or agreement in place between the City of New York and MTA that would direct the revenue to MTA to support the Capital Program."*

The absence of an agreement in place for an alternative does not constitute sufficient grounds to exclude an alternative from consideration. Most transportation projects require agreements before they can be implemented. Given this, for maximum factual accuracy the statement in Table ES-1 that T-2 "Does not meet" the Project objectives should be revised to indicate that T-2 "Meets" the Project alternatives (possibly with a footnote indicating that an agreement is necessary).

The EA fails to note in this section that agreements that will be necessary with USDOT to implement congestion pricing under the VPPP. Should the lack of an in-place agreement be sufficient to exclude an alternative from further consideration, the Action Alternative should also be excluded or a similar footnote to the above should be added.

Criteria used to exclude alternatives should be applied impartially across alternatives and reflect whether they are bona fide environmental constraints, or whether they are matters of negotiation.

In addition, the EA does not consider hybrids of any of the preliminary alternatives. These include:

- Alternative O-1 to "Reduce government-issued parking permits" meets both objectives of the Project in reducing congestion but is excluded from further analysis for failing to generate the revenue MTA seeks for its capital projects. Incorporating this into the Action Alternative could deliver even greater congestion and air quality benefits than the current Action Alternative (at no additional cost to the private sector). As the EA documents, in the 11 census tracts with the highest percentages of car commuters, the largest fraction, 45%, work in "Public Administration"; the next highest fraction, 14.6%, work in "Educational, health and social services" – which likely also includes many public sector employees. Given the outsize contribution of public sector employees to car use and thus congestion, it is unclear why this proposal has not been incorporated into the Action Alternative.
- Alternative NTP-1 to reform parking pricing, such as by "increased rates for on-street parking and/or introduction of an overnight on-street parking fee", is excluded for an estimated VMT reduction of less than 1%. It is not clear that VMT reduction corresponds directly to a reduction in congestion in this case. New York City is unusual among large cities in that much of its on-street parking, even in the CBD, is free. Underpricing of goods (which includes free parking) tends to produce scarcity, and scarce available parking leads to drivers to 'hunt' for a space and/or to double park, obstructing traffic. This is especially common among for-hire vehicles, as the EA notes but does not quantify (p. 6-35), and for delivery vans. Both hunting for parking and double-parking contribute to congestion.

14193-25467

14193-25468

Western Connecticut Council of Governments

2 of 9

## Francis Pickering, WestCOG, September 9, 2022 (Submission 14193) - Continued

14193-25468

Did the model used in the analysis account for these behaviors? A model that estimates trip and VMT reduction due to higher parking costs should not only measure the mileage between the origin and destination of trips that are no longer made by car, it should also consider the reduction in VMT from hunting for parking spaces – which applies both to trips that are no longer made by car or truck and to trips that are still made by car and truck but no longer involve hunting for parking at length, due to the presence of available spaces at the destination. Furthermore, a model that uses trips and VMT as a proxy for congestion fails to account for the reduction in double-parking that would result from increases in parking space availability created by appropriate pricing. Reduction of double-parking could significantly lessen congestion but would not necessarily reduce trips or VMT; as such, this would not be captured by a model that only estimates trips or VMT.

Without use of an appropriate model – i.e., one that measures congestion rather than proxies for it – parking reform alternatives cannot be reasonably excluded on the basis of not meeting congestion reduction goals. Such reforms may include setting rates to ensure that one or two spaces is available per block and/or creating spaces for vehicles that tend to double-park (e.g., delivery vans, for-hire vehicles). In addition, as with Alternative T-2, the absence of an agreement in place for an alternative does not constitute sufficient grounds to exclude an alternative from consideration. Most transportation projects require additional agreements before they can be implemented. Given this, for maximum factual accuracy the statement in Table ES-1 that NTP-1 “Does not meet” the Project objectives should be revised to indicate that NTP-1 “May meet” the Project alternatives (possibly with a footnote indicating that an agreement is necessary).

14193-25469

Given the role of free parking in incentivizing automobile use and contributing to congestion; and USDOT’s consistent promotion of parking pricing, notably through its Tolling and Pricing Program, excluding parking pricing as a standalone alternative from the Project and/or not integrating it as a component of the Action Alternative is a significant missed opportunity and a procedural defect.

14193-25470

Lastly, the EA does not include consideration of ‘soft’ rather than ‘hard’ infrastructure to realize congestion pricing. A disproportionate share of the vehicles driving and creating congestion in Manhattan are fleet or network vehicles: per the EA, by fall 2019, taxis and for-hire vehicles alone made up 48% of all vehicles circulating in the CBD (p. 6-35), and trucks made up 8-12% of all traffic in the City (p. 6-39). In other words, fleet and network vehicles account appear to account for majority of traffic in the CBD.

This is important is because such vehicles generally carry devices that record their routes, including the mileage, time, and time-of-day. One alternative that the EA did not consider but perhaps should is mobile tolls. With mobile tolls, congestion tolls on these vehicles would be assessed based on the reports of this on-board equipment (which could be as simple as an ‘app’). This charge could be a dynamic toll to enter or exit the CBD, or it could relate to the time the vehicle is in operation in the CBD – and thus be more proportional to the contribution of each vehicle to congestion. A vehicle that is in constant circulation in the CBD adds far more to congestion than one that is driven into the CBD and left parked there for the rest of the day; yet none of the Project alternatives differentiate between the vastly differing impacts of these vehicles

14193-25470

in the tolls proposed. Many toll systems are proposing or are augmenting existing toll transponders, toll tags, or license plate scanners with smart device-based tolls; the lack of inclusion of such a technologically forward-looking alternative is curious.

14193-25471

### Congestion Pricing and Policy Implications

In any given calendar period, the dollar amount of tolls proposed under the Project would be fixed, varying only by vehicle type and by time of day (peak, off-peak, and overnight). It is not clear how this differs from existing toll systems across the nation, including those under the authority of the Port Authority, many of which vary tolls by time of day but are not considered congestion pricing. (Indeed, the Port Authority even uses the same time-of-day classifications as the EA proposes: peak, off-peak, and overnight.) Neither the tolls proposed under the EA nor those levied by agencies such as the Port Authority vary in response to actual congestion.

Implementation of this Project as proposed under the EA could set a precedent, with significant environmental, economic, and fiscal impacts across the nation. Namely, if a time-of-day toll is sufficient to allow a highway facility to receive both toll revenue and Federal aid, then why should not all toll facilities in the nation be allowed to collect Federal aid in addition to toll revenues?

Without an increase in Federal aid, allowing existing facilities that collect tolls and have been historically ineligible to receive Federal aid – from bridges and tunnels to statewide toll roads – to receive such aid could have major impacts on the National Highway System. Increases in the mileage of highways eligible for Federal aid could result in changes to the distribution of funds among states. States, such as Connecticut, which do not have toll facilities could see decreases in their aid; states with extensive toll facilities (e.g., New York) could see increases.

The 28-county Study Area includes many bridges, tunnels, and highways that potentially could gain additional revenue, as well as many more facilities that could stand to lose revenue – including many in Western Connecticut – should this fundamental premise of Federal aid come undone. Such a policy change may be inconsistent with the plans and policies adopted by entities at state and regional levels within the Study Area as well as beyond it and could be expected to have a range of impacts not only on transportation infrastructure across the country, but on the communities, economies, and environments they pass through and serve. The draft EA fails to recognize these risks and potentially significant impacts.

14193-25472

True congestion pricing, i.e., tolls that vary dynamically in response to congestion, have been deployed in numerous jurisdictions, both domestic and international. These systems have proven superior to static tolls at reducing congestion. Given the benefits of congestion pricing, it is unclear why an EA that is intended to reduce congestion through “congestion pricing” does not include congestion-driven dynamic pricing among any of the alternatives it considers. Indeed, the EA does not include a single reference to dynamic pricing. This is a concerning and unusual omission and suggests that either those who prepared the EA are unaware of the well-documented history of dynamic pricing in the United States, or that such an alternative was intentionally omitted – without being formally considered in the EA.



## Francis Pickering, WestCOG, September 9, 2022 (Submission 14193) - Continued

14193-25472

Both these considerations (potential for impacts on the Federal aid system and its recipients, potential for inclusion of dynamic pricing as alternative) may have been raised had the EA process included opportunity for meaningful participation by regional stakeholders.

**Adverse Impacts**

It is not apparent that the impacts described below were considered in the development of the EA; engagement of partners and stakeholders on these matters may have been inadequate or lacking. Without this, it is not possible adequately to evaluate impacts nor to plan for their mitigation.

14193-25473

**Rail Station Parking**

The EA determines that the Project would have “Only Beneficial or No Adverse Effects” on parking, neighborhood character, economic conditions, or regional transportation. These are not credible findings and reflect deficiencies in the preparation of the EA, including a failure to consider all relevant factors – including parking outside City limits, which the EA ignores – and meaningfully to involve regional stakeholders beyond New York City.

With respect to parking: the intent of congestion pricing is to make driving so expensive that a substantial number of persons who travel by car do something else. In this Project, the goal is to push a mode shift, so that drivers switch to public transit. (Under the Project, revenues collected from those who continue to drive would fund transit.)

While mode shift is a laudable goal, it is premised on current drivers having a viable option besides driving. In many places, this may not be the case, as the transit system and associated facilities lack the capacity needed to enable a mode shift. This is specifically not the case in Connecticut, where rail station parking already exceeds demand. The shortage is so extreme that wait lists for a parking permit at many stations on the Metro-North New Haven Line are years long.

The Project does not provide any remedy for this problem, as the New York State law providing for the Project does not contemplate toll revenues collected to be reinvested in transit facilities (and thus mitigating the impacts of the Project) in neighboring states. In other words: the Project would significantly increase the cost of driving into New York City for Connecticut residents without providing them a practical alternative.

Had the EA authors consulted with regional stakeholders, including reviewing publicly available information on rail station access, they may have found that the proposal could be expected in southwestern Connecticut to:

- Add to the length of the parking waitlists on Metro-North New Haven Line stations
- Potentially exhaust available day parking spaces and parking spaces during off-peak times
- Result in parking overflowing onto local streets, adversely impacting neighborhoods, creating local congestion in rail station areas (which are often city in town centers), and increased enforcement costs
- Increase economic and time costs for households who must drive because they are unable to find parking, including for those who drive to a train station, find no parking is available, and must either cancel their trip or proceed with a delay and a toll

14193-25473

These impacts may be significant in Western Connecticut as a region as well as at the neighborhood level; however, the EA fails to consider them.

Upgrades to transit service in New York City and State may benefit Connecticut residents whose trips include those services, but limiting the reinvestment of toll revenue in stations and the surrounding areas to locations in New York creates a two-tier system that disadvantages the residents of neighboring states. (The New Haven Line east of the New York State border, the Danbury and New Canaan branch lines, and Metro-North stations in Connecticut would not see any revenues from congestion pricing.) The EA does not address this inequity.

14193-25474

**Economic Conditions**

High costs in New York have resulted in relocations to other states. The Project would further increase the cost of doing business in New York and, as such, could be expected to factor into locational decisions. However, the EA does not evaluate the impact of congestion tolls on economic development (although it does note a significant share of trips to the Manhattan CBD may be suppressed, or “canceled”, as has been observed in other cities). (p. 4A-44)

While an increase business relocation out of New York City may be a positive result of the Project, at least for receiving states such as Connecticut, all significant impacts, negative and positive, should be addressed by the EA. Furthermore, even developments that are largely regarded as positive may have negative impacts. For instance, movement of businesses, jobs, and residents out of New York into Connecticut may create additional demand on highways, schools, hospitals, and other public services that are already at or above capacity.

14193-25475

**Household Impacts and Equity**

The EA states:

*“To address the high and disproportionate adverse effects on low-income drivers who feel they must still drive...The Project will include a tax credit for CBD tolls paid by residents of the Manhattan CBD whose New York adjusted gross income for the taxable year is less than \$60,000. TBTA will coordinate with the New York State Department of Taxation and Finance (NYS DTF) to ensure availability of documentation needed for drivers eligible for the NYS tax credit.”*

That is, to mitigate the impact of the Project, tax credits will be given to drivers who live in the best-served transit area in the United States but not to those who live in areas with areas with less access to quality transit, including “transit deserts”, where little to no transit is available. These are not areas where residents do not “feel” they have to drive: these are areas where residents often must drive because there are literally no other options.

It is well-documented that housing prices and transportation access are related: the closer homes are high-quality transit, the higher values tend to be; the farther they are from it, the lower they tend to be. (The ‘drive till you qualify’ phenomenon is called that for a reason – it involves driving beyond the range of transit service.)

## Francis Pickering, WestCOG, September 9, 2022 (Submission 14193) - Continued

14193-25475

While a broad base is desirable for a toll system, as it lowers the average toll, financial exceptions such as credits and deductions should be rational, nondiscriminatory, and equitable. It is not clear how the credit proposed is consistent with these principles.

Project revenues are intended to be used to improve transit service, but, as noted before, these funds may only be spent in New York State. Thus, the proposal could further inequity by creating three classes of lower- to middle-income drivers: those who live in a transit-rich, high economic opportunity area (who would be eligible for a credit), those who do not but live in New York (who would not be eligible for a credit but would see local transit investment), and those who do not live in New York (who neither would be credit-eligible nor would see local transit reinvestment).

The economic and equity implications of this arrangement merit further analysis.

14193-25476

**Driving Costs**

The estimates of current driving costs and increases in driving costs under the Project include only one location in southwestern Connecticut, viz. Fairfield. (Tables 4A-18 and 4A-19, pp. 4A-29, 30). Fairfield is at the fringe of the New York City commute-shed. Calculations using it will understate the percent impact of tolls on travel costs for most commuters from Connecticut. A location closer to New York City with a larger Manhattan CBD commuter population should be included to give a better estimate of the percent increase in travel costs. Stamford would be a good location for such an analysis.

14193-25477

**Safety and Health**

Much of the discussion in the EA revolves the Environmental Justice impacts of freight trucks moving from surface streets and onto limited access highways, even though the EA notes that this is a beneficial impact and no mitigation is needed. (p. 4A-52) Missing from this discussion are the safety benefits of moving thousands of large, dangerous vehicles off neighborhood streets and out of the path of pedestrians and cyclists (of all ages and abilities). Instead, the EA specifically proposes a toll structure (Scenario G) that is intended to minimize the “beneficial effects” of truck reversion to the highways and preserve the status quo to a great extent.

It is not clear how this is consistent with Transportation Performance Measures to reduce fatalities and serious injuries, including of vulnerable users, or with the City’s and federal government’s focus on Vision Zero/Toward Zero Deaths approaches.

If a goal of Scenario G is to reduce the environmental impacts of additional trucks on limited access highways on adjoining neighborhoods, a better approach than supporting the continuation of truck diversions onto surface streets would be to accelerate the transition to electric vehicles. As the vehicle fleet electrifies, the air and noise pollution created by a highway will significantly attenuate. One method to accelerate this transition, on for instance, the Trans-Manhattan and Cross-Bronx Expressways, could be adjusting tolls on the George Washington Bridge so that diesel trucks pay a higher toll, while electric trucks, at least during the transition, pay a lower or no toll.

14193-25478

**Freight System Performance**

The EA does not adequately evaluate impacts on regional freight movements. The most important highway on the eastern seaboard, Interstate 95, passes directly through New York City and would be affected by the Project, as would several other freeways of regional importance, through reversion of trucks from surface streets to a limited access highway. While this is a generally a desirable outcome, these facilities are operating far above capacity, and additional traffic can be expected to have a detrimental impact on use of these facilities, including by freight – which has impacts beyond New York City and the Study Area. The EA does not evaluate Project impacts on larger-scale freight movements.

The EA notes that the Project could have adverse impacts on highways of regional importance, including the Trans-Manhattan Expressway and the Cross-Bronx Expressway (p. 4B-78) yet does not propose (or even mention) any capital improvements to these facilities to improve capacity. The Project only contemplates monitoring and “Transportation Demand Management measures such as ramp metering, motorist information, signage and/or targeted toll policy modifications.” While such measures may be able to reduce congestion at the margins – and if effective, should be implemented, even without the Project – they are inadequate to address the severe and worsening congestion on these highways.

Before the COVID-19 pandemic, freight traffic was expected to increase significantly (25%) by 2030; with the move to ‘online everything’, growth likely will surge beyond this. With this growth, New York City freeways are becoming chokepoints in the freight network, impairing the supply chain and economic growth regionally if not nationally.

The EA should include measures to mitigate these impacts. Whether they are additional capacity on area bridges and roads, rail networks, and/or waterborne freight, the need is critical and must be addressed – even if New York State law does not currently provide for the Project’s toll revenues to be invested in freight infrastructure. A project that generates \$15 billion in additional revenue, with a significant fraction coming from trucks, but does not program any of that to relieving barriers to freight does not equitably serve all users.

Potential freight improvements include:

- Enhanced, expanded, and/or new river crossings and area freeways
- Restoration of freight rail connectivity across the Lower Hudson River
- Enhancements to ports in Connecticut and coastal freight barges
- Accommodation of smaller commercial vehicles (e.g., delivery vans) on parkways

While the New York City area has avoided large-scale surface transportation projects (aside from transit) such as these for many years, the failure of the transportation network capacity to keep up with demand is creating a bottleneck of national concern, choking flows of people and goods in and out of New England. This is an unacceptable situation and should be recognized and addressed in any major transportation initiative in the region, including the Project.

## Francis Pickering, WestCOG, September 9, 2022 (Submission 14193) - Continued

14193-25479

**Public Involvement**

The EA states that:

*“The Project Sponsors have implemented a robust agency outreach plan to solicit input from residents, businesses, Federal/regional/state/local agencies, across the 28-county study area. Information about the Project and the process was conveyed via the Project website, a Project Fact Sheet, social media, direct email, and multiple print media outlets. During the early Outreach period, 10 virtual public outreach and 9 environmental justice webinar sessions were held, for a total of 19 sessions. Real-time answers were provided to those who submitted written factual, technical and logistical questions related to the Project and process. The webinars, which remain available for viewing, were streamed live on YouTube, and recordings were subsequently posted on YouTube for on-demand viewing.”*

While meeting tallies may be numerically correct, WestCOG would not characterize the process as robust. Between the initial outreach period and release of the draft EA, WestCOG received no communications from the Project Sponsors regarding the project, despite having submitted a comment letter (for which WestCOG received no acknowledgement of receipt or response). WestCOG was never invited to participate following the initial period as a partner or consulted with in this capacity. As the host of Metropolitan Planning Organizations (MPOs) that will be affected by the Project, this lack of interagency consultation is inconsistent with both the federally-mandated 3C process (Comprehensive, Continuing, and Coordinated), as evinced in the strong working partnerships that MPOs in the New York City region have established through the Metropolitan Area Planning Forum to address matters of interregional significance. A process in which a project is announced, vanishes, and then reemerges as a draft EA, with no communication or opportunity for engagement in the interim, is a deficient process.

In addition, timing a public comment period to run in August and over the Labor Day weekend, while technically permissible, is not ideal and gives the impression that the Project Sponsors are seeking to avoid and minimize review and comment.



## Response to Francis Pickering, WestCOG, September 9, 2022 (Submission 14193)

**14193-25465**

See response to Frequently Received Comment 10.

**14193-25466**

This EA is being prepared to specifically evaluate the environmental consequences of USDOT approval of the Project Sponsor's application to the VPPP. That is the one singular federal action that is triggering the need for environmental review pursuant to NEPA. The purpose of considering alternatives in a NEPA analysis is to identify reasonable alternatives with fewer or reduced adverse effects. As explained in Chapter 4, "Transportation," the adverse effects of the CBD Tolling Alternative identified in the EA noticeably rise in tolling scenarios that balance tolls paid among the routes into the CBD through credits for tolls paid on existing tolled facilities and currently free East River crossings, as would be the case in Alternative T-2. In Alternative T-2, the tolling of currently free crossings plus the lack of a Manhattan CBD toll would be expected to have additional diversionary effects. In order to reach revenue needs without tolling all entry points to the CBD, toll rates would have to be even higher than the highest toll rates studied in the EA. Therefore, Alternative T-2 would cause not only diversions but burden low-income drivers, in comparison to the CBD Tolling Alternative. Therefore, Alternative T-2 would neither be reasonable nor designed to reduce adverse effects and need not be advanced for further analysis. Finally, Alternative T-2 is not contemplated by existing law and would require State legislation and/or complex agreements between the State and City to allow toll revenues to be used for transit improvements.

**14193-25467**

All earlier iterations of congestion pricing or alternatives were determined to not meet the core purpose and need as defined in Chapter 2, "Project Alternatives." See also response to Comment # 25466.

**14193-25468**

There is an error in Table 2-2 of the EA where it is noted that Alternative O-1 (reduce government issued parking permits) "Meets" Objectives 1 and 2 (reduces daily VMT by 5% and 10%, respectively). That table should say "Does not meet" for Objectives 1 and 2. Therefore, since Alternative O-1 does not meet purpose and need, nor any of the three objectives, it has been eliminated from further consideration. Parking reforms as presented in NTP-1 are not precluded as a future action that may be considered by New York City and would not be anticipated to require NEPA review for implementation. They could be pursued as separate initiatives by New York City in the future if it chooses based on relevant policy considerations. In terms of model characteristics, the only available, full regional demand model is the BPM model developed and maintained by the federal Metropolitan Planning Organization for the New York region (the New York Metropolitan Transportation Council, or NYMTC). It is the basis for transportation planning and is utilized by federal agencies in considering funding or other approvals for transportation projects in the region. It is the established model for estimating changes in travel choice by all modes of transportation in the New York region based on changes to the transportation infrastructure and costs including tolls and transit fares. Therefore, the BPM model provides the ability to predict changes in the number of vehicles on roadways to and from the CBD, the changes in relative VMT, and the potential mode shifts resulting from implementation of the CBD Tolling Program. In terms of parking, the EA provides an overview analysis of driving costs to and from the Manhattan CBD. Parking costs are already very high in New York City and any change in the policies regarding placard or other forms of free parking for certain workers would unlikely change the overall costing dynamic of parking. Most street parking in the CBD is not free and it is limited in availability, particularly during the business day with pay spaces restricted to commercial vehicles or open metered parking. There are certain residential areas that still retain areas of free alternate side of the street parking. These spaces are generally limited in turnover and not readily available for short term parkers during business hours, and therefore eliminating them would not meaningfully induce mode switching. Furthermore, placard parking passes are for a small segment of the driving public and would not provide for a meaningful traffic reduction. Also see response to Frequently Received Comment 9, Frequently Received Comment 2, and Frequently Received Comment 3.

## Response to Francis Pickering, WestCOG, September 9, 2022 (Submission 14193) - Continued

**14193-25469**

While urban transportation planning nationally has advocated free parking as an obstacle to increasing non-auto modes of travel (i.e., Donald Shoup's "The High Cost of Free Parking," March 2005), this is not a particularly relevant consideration in the Manhattan CBD. First, nearly all trips to and from the CBD are already made by transit. Second, parking is not readily accessible in the CBD, and it is rarely free. The examples of free or subsidized parking such as placard parking for certain public employees is not a major influence in the overall volume of traffic. Additionally, as noted in the response to Frequently Received Comment 34, the Traffic Mobility Act requires that NYCDOT study the effects of the CBD Tolling Program on parking conditions and availability in and around the Manhattan CBD following implementation of the Project.

**14193-25470**

Dynamic, real-time or mileage-based tolling is not included in the proposed CBD Tolling Program but is not precluded in the future based on available technologies or changes in policy based on the Transportation Mobility Act's requirement for regular performance reporting and optimization of tolling policies. The TMRB could recommend, and the TBTA Board could adopt, a surcharge treatment for taxis and FHV's similar to the New York State Congestion Surcharge already in place. The new surcharge could be applicable to intra-CBD trips wholly within the Manhattan CBD. TBTA is in ongoing discussions with NYC Taxi and Limousine Commission and NYS Department of Taxation and Finance on this issue. See responses to Frequently Received Comment 15 and Frequently Received Comment 16 for additional detail on how the TMRB will evaluate and make recommendations for tolling options including taxis and FHVs.

**14193-25471**

The Project Sponsors are seeking approval of the Project from FHWA under its Value Pricing Pilot Program (VPPP), which is a program "intended to demonstrate whether and to what extent roadway congestion may be reduced through application of congestion pricing strategies, and the magnitude of the impact of such strategies on driver behavior, traffic volumes, transit ridership, air quality and availability of funds for transportation programs". The VPPP was first established over thirty years ago by the U.S. Congress as the Congestion Pricing Pilot Program in 1991. Through this program, FHWA has provided tolling authority to a limited number of state, regional, and local governments not otherwise authorized under 23 CFR Section 129. A cordon-based congestion pricing approach, as proposed with the CBD Tolling Program, has not been implemented in the United States. While it may demonstrate the utility of congestion pricing for other cities, approval of this Project and acceptance into the VPPP would not alter the statutory limitations on tolling federal aid highways or make more highways eligible for federal aid. It should also be noted that the examples cited in the comment are generally tolls tied to a specific element of transportation infrastructure, including our regions many bridges and tunnels, for which the purpose is primarily to establish local and regional funding specific to the facilities being tolled. The CBD Tolling Program is uniquely designed to encourage drivers to consider shifting their mode or time of travel while the revenues collected are dedicated to transit capital investment.

**14193-25472**

Dynamic pricing is a form of variable time of day pricing. It has typically been applied to High Occupancy Tolerated (HOT) lanes and has a real-time aspect as measurable volumes and speeds on specific highway segments can be monitored and used to alter pricing and consumers can make that choice enroute. Given the size and complexity of the broad regional initiative proposed with the CBD Tolling Program, and the need to give a predictable cost basis for trip and modal decision-making for the entire journey, the development of the program has been based in standardized variable pricing by specific time periods. Regarding opportunities for meaningful participation by regional stakeholders, please see response to Frequently Received Comment 12.

## Response to Francis Pickering, WestCOG, September 9, 2022 (Submission 14193) - Continued

**14193-25473**

The New York State legislature passed the Traffic Mobility Act (the Act), which was signed into law by the Governor in April 2019, to reduce congestion in the Central Business District and create a new recurring local revenue source for transit investment. Consistent with the Act, revenues would be directed to a "lockbox" fund that is designated for use only for this Program and the revenue from the CBD Tolling Program would be allocated as follows: 80 percent to New York City subways and buses, 10 percent to Metro-North Railroad and 10 percent to Long Island Rail Road. Under the terms of Metro-North Railroad's Service Agreement with the State of Connecticut, Connecticut Department of Transportation (CDOT) covers the full cost of all non-movable and certain movable capital assets located or used primarily in CT. While these provisions restrict the use of Project revenues in CT, the CBD Tolling Program would still improve travel conditions on Metro-North for CT customers. Moreover, the CBD Tolling Program would improve travel conditions in Manhattan for all parties by a) reducing peak-hour traffic entering and leaving the city, and b) maintaining and enhancing mass transit in Manhattan as well as the other boroughs. As to the concerns related to benefits and investments, see response to Frequently Received Comment 4.

**14193-25474**

The New York metro region is an expensive place to live and work and all three states are considered high-tax states. However, the region is also an anchor of the national economy which has benefited all regional residents. While the cost of driving in and out of the CBD is already expensive, the vast majority of trips are made by the region's extensive transit system that is at the core of urban mobility supporting the region's high value economy. The dynamic of businesses or residents that may choose to relocate to lower cost locations is long established and driven by many factors that would not change with or without the proposed CBD Tolling program. See, also response to Frequently Received Comment 28.

**14193-25475**

The rationale for the income-based exemption within the Manhattan CBD is established in the Transportation Mobility Act and described in the EA. While the Comment correctly notes the general value of living close to transit in terms of property values, it is also the case, as established in the EA, that the farther one lives from the Manhattan CBD, the less likely they are to be commuting to the CBD or driving there regularly for other reasons. In addition, residents from outside the CBD who do travel into Manhattan would benefit from the sustainable funding generated by the CBD Tolling Program that would support suburban rail, subway, and bus services to and from and within the CBD. Furthermore, those who do choose to drive into the CBD would benefit from time savings resulting from reduced congestion.

**14193-25476**

The typical and representative costs of driving to the CBD from around the region are provided in the EA for perspective and context and reflect both shorter and longer trips into the CBD. As the comment notes, longer trips generally have higher costs attributable to additional miles traveled thereby making the fixed costs of parking and tolls a lower proportion of the total cost of the commute. As such, the commute cost from various origin points throughout the region can reasonably be inferred based on nearby example cities and the commute costs from all potential origins points within the region do not need to be identified. Furthermore, the difference between Stamford and Fairfield would not alter the basic value of providing a range of distance and fixed costs for driving compared to transit.



## Response to Francis Pickering, WestCOG, September 9, 2022 (Submission 14193) - Continued

**14193-25477**

As the final tolling schedule will be determined by the TMRB, the EA provides a basis for evaluating a range of possible effects resulting from implementing the Proposed Project based on variations in tolling pricing, exemptions, and crossing credits. All the scenarios provide for a meaningful reduction in truck trips to and through the Manhattan CBD (through trips are those trips which can divert since trucks with specific end or starting points to the CBD are assumed fixed), with Scenario G still providing for a 21 percent reduction in Manhattan truck trips. Scenario G was added to the framework specifically to include a tolling scenario to minimize an increase in truck trips in the South Bronx as requested by community participants in the process, as well as by the participating federal agencies. The tolling program within this framework of analysis does not preclude technology applications and variable tolling among types of trucks as noted in the comment. See also, Frequently Received Comment 39.

**14193-25478**

Freight movement in the New York region has been a chronic source of congestion and inefficiency for many years. By encouraging less auto travel to and from the Manhattan CBD from trips made throughout the region, the proposed CBD Tolling Program would have a beneficial reduction in overall VMT in the region, with more benefit concentrated closer to the CBD itself. Reduced VMT would also result in reduced congestion and, therefore, reduced travel times and increased productivity. Additionally, the diversions of through trucks using local streets back to the highway network would be a small proportion of overall truck movements in the region and would not generate the level of proportional impact and commensurate mitigation suggested by the comments in terms of major infrastructure investments in facilitating freight movement. However, the program does not preclude such investments and would be compatible with identifying options to further reduce truck traffic on local streets and regional highways. See also the response to Frequently Received Comment 39 for information on lower overnight tolls for trucks.

**14193-25479**

WestCOG was identified as a participating agency and invited to early meetings for project briefings and opportunities for additional input. WestCOG did submit comments during the open public participation period and its letter was incorporated into the ongoing analyses and recorded as part of the environmental record. WestCOG was invited to, and participated in, the 9/20/21 Agency Meeting, as well as the 8/4/22 Resource Agency Meeting (Executive Director Francis Pickering attended both meetings). Additionally, WestCOG was one of the government repositories for the EA in Connecticut and received a hard copy on Monday 8/8/22. See, also response to Frequently Received Comment 11 and Frequently Received Comment 12.

## Response to Christopher Rooney, No Value, August 28, 2022 (Submission 7875)

### 7875-13077

FHWA and the Project Sponsors identified the CBD Tolling Alternative as the Preferred Alternative for the Project because it was the only preliminary alternative that would meet the Project purpose and need and would also meet the purpose and objectives identified for the Project, as described in the EA in **Chapter 2, “Project Alternatives” (Section 2.3 and Tables 2-1 and 2-2)**, unlike the other alternatives considered. The term “Preferred Alternative” is used in NEPA evaluations of Project alternatives identified by Project Sponsors as the alternative that best meets the Project purpose and need. During a NEPA evaluation, a preferred alternative must be identified. The selected alternative for the Project will be identified in the FHWA’s decision document in consideration of comments received throughout the environmental review process, including those received on this EA and from any public outreach.

Implementing tolls on the untolled East River and Harlem River Bridges is explored as Alternative “T-2” in the preliminary alternative screening analysis the Project Sponsors conducted, as described in **Chapter 2, “Project Alternatives.”** As described in the EA, earlier studies showed this alternative would reduce congestion and could raise adequate toll revenues to meet the Project goal. As noted by the comment, Alternative T-2 would require an agreement between the City of New York and MTA to direct the revenue to the MTA Capital program. Currently, an agreement of this nature does not exist. In addition, the 2008 New York City Traffic Congestion Mitigation Commission Study identified a number of disadvantages to a plan like this alternative, including the following: (1) this alternative would not address trips that start and end within Manhattan, such as trips beginning or ending on the Upper East Side and Upper West Side; and (2) this alternative would adversely affect local trips between the South Bronx and Harlem/Washington Heights, which could result in a local adverse economic impact in two environmental justice communities. For more information, see response to Frequently Received Comment 2 and Frequently Received Comment 3.

Regarding charges for vehicles that are parked in the Manhattan CBD, please see the response to Frequently Received Comment 20.

The \$60,000 threshold for the New York State tax credit for CBD tolls paid by residents of the Manhattan CBD is established by the Traffic Mobility Act. Please see the response to Frequently Received Comment 37 regarding how the Project Sponsors will

### 7875-13077

mitigate the economic effect to low-income residents of the Manhattan CBD. See also the response to Frequently Received Comment 18 regarding exemptions and credits.

As detailed in the EA, a key objective of the Project is to create a funding source for MTA capital improvements and generate sufficient annual net revenues to fund \$15 billion for capital projects for the MTA Capital Program. Crossing credits directly reduce the amount of revenue that is generated by the Project and therefore the more vehicles that receive crossing credits, discounts, and/or exemptions, the higher the toll must be to ensure sufficient revenues are generated to meet the Program’s revenue target.

As required by the Traffic Mobility Act and FHWA’s Value Pricing Pilot Program, the proposed CBD Tolling Program would have a variable toll amount. Although details of that variation have not been determined, the Project Sponsors anticipate that the tolls would vary by time of day, so that higher tolls would be charged during peak periods when congestion is greater. Regarding the final tolling structure and the process for selecting the actual toll structure, please see the response to Frequently Received Comment 16 and Frequently Received Comment 15.

Based on the analysis presented in the EA (see **Subchapter 4A, Transportation: Regional Transportation Effects and Modeling;** **Chapter 10, “Air Quality;”** and **Chapter 11, “Energy”**), overall the CBD Tolling Alternative would reduce vehicle-miles traveled in the region in all tolling scenarios, which would result in corresponding reductions in air pollution and energy usage. Please see the response to Frequently Received Comment 9 regarding the modeling conducted and Frequently Received Comment 33 regarding the effects on traffic outside the Manhattan CBD.

The Project Sponsors recognize that for certain individuals, transit is not effective mode of transportation to work because their work schedule is not conducive for transit use, because they have limited transit options to their place of work, or, in some cases, because they have free parking at their place of work, as discussed in the EA in **Chapter 6, “Economic Conditions.”** The Project is designed to reduce congestion in the Manhattan CBD resulting from vehicle journeys for any reason, including work and non-work journeys. The modeling prepared for the project and the EA analyses consider all journeys in the region including both work and non-work purposes.

## Leo Sasso, No Value, September 1, 2022 (Submission 9097)

### Central Business District Tolling EA - RECORD #9097 DETAIL

Status :

Record Date : 9/2/2022

Submission Date : 9/1/2022

First : Leo

Last : Sasso

Company/Organization/Affiliation : No Value

9097-14723 | Text : No for motorcycle please



# **Notice of Availability of the Final Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI)**

## **Federal Highway Administration Triborough Bridge and Tunnel Authority New York State Department of Transportation New York City Department of Transportation Central Business District Tolling Program**

The Triborough Bridge and Tunnel Authority (TBTA, an affiliate of the Metropolitan Transportation Authority), the New York State Department of Transportation (NYSDOT), and the New York City Department of Transportation (NYCDOT) are issuing this notice to advise the public of the availability of the Final Environmental Assessment (EA) and the Federal Highway Administration's (FHWA) draft Finding of No Significant Impact (FONSI) (pursuant to 40 Code of Federal Regulations (CFR) §1501.6 and §1506.6) for the Central Business District (CBD) Tolling Program (the Project). The purpose of the Project is to reduce traffic congestion in the CBD in a manner that will generate revenue for future transportation improvements, pursuant to acceptance of the Project into FHWA's Value Pricing Pilot Program.

In compliance with applicable regulations promulgated by the Council on Environmental Quality and FHWA pursuant to the National Environmental Policy Act (NEPA), respectively, 40 CFR Parts 1500-1508 and 23 CFR Part 771, the Final EA was prepared to evaluate the potential environmental impacts of, and identify any mitigation measures for, the Project, in consideration of public and agency input, and responds to comments received from the public and agencies on the EA that was published in August 2022. FHWA intends to apply Title 23 United States Code (USC) § 139(l), Limitations on Claims, to any decision it may issue with respect to the proposed public transportation project.

As a project requiring FHWA approval, the Project is subject to the requirements of Section 4(f) of the U.S. Department of Transportation Act of 1966 (now codified in 23 U.S.C. §138 and 49 U.S.C. §303), and the FHWA implementing regulations, 23 CFR Part 774. In accordance with the applicable regulations, and as documented in the Final EA, the FHWA makes a de minimis impact finding for the Section 4(f) use of Central Park and the High Line by the Project.

### **Availability of the Final EA and Draft FONSI**

The official 30-day public availability period for the Final EA and draft FONSI for the Project will begin on **May 12, 2023** and will end on **June 12, 2023**. The draft FONSI and Final EA will be available to the public online at [mta.info/CBDTP](https://mta.info/CBDTP), and in hardcopy at TBTA, NYSDOT, and NYCDOT offices and FHWA division offices in New York, New Jersey, and Connecticut. In-person assistance with accessing the documents online will be available at specific libraries throughout New York, New Jersey, and Connecticut. For the list of locations where the documents are available, visit [mta.info/CBDTP](https://mta.info/CBDTP) or contact the CBDTP Team at 646-252-7440.



U.S. Department of Transportation  
Federal Highway Administration



Department of  
Transportation



CENTRAL BUSINESS DISTRICT (CBD) TOLLING PROGRAM

# Final Environmental Assessment

April 2023

Federal Lead Agency



U.S. Department  
of Transportation

**Federal Highway  
Administration**

*Project Sponsors*



**Department of  
Transportation**







# **Final Environmental Assessment and Draft Finding of No Significant Impact (FONSI) for Central Business District (CBD) Tolling Program Manhattan, New York**

Submitted Pursuant to 42 U.S.C. 4332(2)(c), 23 U.S.C. 138, and 49 U.S.C. 303

by

U.S. Department of Transportation, Federal Highway Administration (FHWA)

Triborough Bridge and Tunnel Authority (TBTA)<sup>1</sup>

New York State Department of Transportation (NYSDOT)

New York City Department of Transportation (NYCDOT)

This Final Environmental Assessment (EA) and Section 4(f) *de minimis* finding document the environmental effects of the Central Business District (CBD) Tolling Program (the “Project”) in New York County, New York, and surrounding areas of New York City and New York State, New Jersey, and Connecticut.<sup>2</sup> The Manhattan CBD is the commercial center of a 28-county region that surrounds and includes New York City. The high density of jobs and residents and the large number of visitors in the Manhattan CBD, has contributed to traffic congestion and delays, slowing travel and jeopardizing the vitality of the area. The Project purpose is to reduce traffic congestion in the Manhattan CBD in a manner that will generate revenue for future transportation improvements, pursuant to acceptance into the FHWA Value Pricing Pilot Program.

The Final EA was prepared consistent with the Council on Environmental Quality and FHWA’s National Environmental Policy Act regulations, as codified in 40 Code of Federal Regulations (CFR) Parts 1500–1508 and 23 CFR 771 respectively to evaluate the potential environmental impacts of, and identify mitigation measures for, the Project, in consideration of public and agency input. The Final EA responds to comments received from the public and agencies on the EA that was published in August 2022.

After careful consideration of a range of alternatives, FHWA and the Project Sponsors (comprising TBTA, NYSDOT, and NYCDOT) have studied the No Action Alternative and the CBD Tolling Alternative for the Project. The Project Sponsors recommend the CBD Tolling Alternative for the Project, and the FHWA has issued a draft Finding of No Significant Impact (FONSI). The official 30-day public availability period for the Final EA and draft FONSI will conclude on June 12, 2023, after which time the FHWA will issue a final agency decision for the Project.

---

<sup>1</sup> TBTA is an affiliate of the Metropolitan Transportation Authority (MTA).

<sup>2</sup> As defined for this Project, the 28-county region includes:

- New York City counties (Bronx, Kings [Brooklyn], New York [Manhattan], Queens, and Richmond [Staten Island])
- Long Island counties (Nassau and Suffolk)
- New York counties North of New York City (Dutchess, Orange, Putnam, Rockland, and Westchester)
- New Jersey counties (Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren)
- Connecticut counties (Fairfield and New Haven)

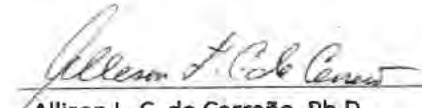




Richard J. Marquis  
Division Administrator  
Federal Highway Administration, NY Division

Date

5/5/2023



Allison L. C. de Cerreño, Ph.D.  
Chief Operating Officer  
Triborough Bridge and Tunnel Authority

5/5/2023

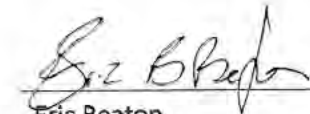
Date



Nicolas A. Choubah, P.E.  
Chief Engineer  
New York State Department of Transportation

5/5/2023

Date



Eric Beaton  
Deputy Commissioner, Transportation Planning & Management  
New York City Department of Transportation

5/5/2023

Date

**Additional Information Can Be Obtained From:**

**Federal Highway Administration**

Richard J. Marquis  
Division Administrator  
Federal Highway Administration New York Division  
Leo W. O'Brien Federal Building  
11A Clinton Avenue, Suite 719  
Albany, NY 12207  
Telephone: (518) 431-4127  
E-mail: [rick.marquis@dot.gov](mailto:rick.marquis@dot.gov)

**Triborough Bridge and Tunnel  
Authority**

Allison L. C. de Cerreño, Ph.D.  
Chief Operating Officer  
Triborough Bridge and Tunnel Authority  
2 Broadway, 23<sup>rd</sup> Floor  
New York, NY 10004  
Telephone: 646-252-7750  
E-mail: [allison.cdecerreno@mtabt.org](mailto:allison.cdecerreno@mtabt.org)

**New York State Department of  
Transportation**

Nicolas A. Choubah, P.E.  
Chief Engineer  
New York State Department of  
Transportation  
50 Wolf Road  
Albany, NY 12238  
Telephone: 518-457-4430  
E-mail: [nick.choubah@dot.ny.gov](mailto:nick.choubah@dot.ny.gov)

**New York City Department of  
Transportation**

William Carry  
Assistant Commissioner for Policy  
New York City Department of  
Transportation  
55 Water Street  
New York, NY 10041  
Telephone: 212-839-6657  
E-mail: [wcarry@dot.nyc.gov](mailto:wcarry@dot.nyc.gov)

## *0. [Foreword]*

### **0.1 BACKGROUND AND TIMING**

The MTA Reform and Traffic Mobility Act (the Traffic Mobility Act) was passed by the New York State Legislature in April 2019 with the goal of reducing traffic congestion within the Manhattan Central Business District (CBD) and creating a dedicated revenue stream to fund the Metropolitan Transportation Authority's (MTA) 2020–2024 Capital Program, as well as any successor programs. To meet these goals, the Traffic Mobility Act directed the Triborough Bridge and Tunnel Authority (TBTA), an affiliate of the MTA, to establish a plan to charge tolls for vehicles entering or remaining in the Manhattan CBD. The resulting tolling program, known as the Central Business District Tolling Program (i.e., the Project), is being proposed by TBTA in partnership with the New York State Department of Transportation (NYSDOT) and the New York City Department of Transportation (NYCDOT) (collectively, the Project Sponsors). The Project would address the need to reduce vehicle congestion in the Manhattan CBD and create a new local, recurring funding source for MTA's capital projects.

The Project Sponsors are seeking the acceptance of the Project into the Federal Highway Administration's (FHWA) Value Pricing Pilot Program (VPPP), through which FHWA can provide tolling authority to state, regional, or local governments to implement congestion pricing programs. When FHWA reviews an application to the VPPP, it must evaluate the potential environmental effects of the proposed action in accordance with the National Environmental Policy Act (NEPA).

In March 2021, the Project Sponsors received approval from FHWA to proceed with a NEPA Class III (Environmental Assessment [EA]) action under 23 Code of Federal Regulations (CFR) Part 771. NEPA Class III actions are those in which the significance of the environmental impact is not clearly established. The CBD Tolling Program EA was prepared to determine the effects of the Project on the built and natural environment.

Meaningful opportunities for public participation and engagement in the Project were initiated with an early outreach period from August 26, 2021, through April 27, 2022. During this eight-month period, over 7,000 comment submissions were received. From September through December 2021, the Project Sponsors held 19 public information webinars, soliciting input from the public, with nine of the sessions specifically focused on environmental justice communities. Over 1,000 individuals participated in the webinars and nearly 400 people provided commentary. Recordings of the public information webinars had generated more than 18,000 views on YouTube as of December 2022. Further, the Project Sponsors convened an Environmental Justice Stakeholder Working Group and an Environmental Justice Technical Advisory Group—which met two and three times, respectively, during the early outreach period. The early outreach period was influential in developing the EA in a manner that would speak to the questions and concerns of the public, especially those of environmental justice communities.

The EA was completed and made available to the public on August 10, 2022. The publication of the EA initiated a 30-day formal public comment period. The public comment period was subsequently extended by 14 days to September 23, 2022, in response to requests for an extension. During this 44-day comment window, more than 14,000 individual submissions and more than 55,000 form letters were received. Many of the submissions had multiple comments, resulting in over 22,000 individual comments during this period. Comments were collected by the Project Sponsors and FHWA through a combination of email, traditional mail, voicemail, fax, and an online form, as well as through oral testimony provided at six virtual public hearings on the EA. During the virtual hearings, 552 speakers offered oral testimony and many more participated during the livestream or watched later via the Project website or YouTube (over 11,200 views as of December 2022). Following the release of the EA, the Project Sponsors held one additional meeting with the Environmental Justice Stakeholder Working Group, and four additional meetings with the Environmental Justice Technical Advisory Group, to further engage with environmental justice communities.

## 0.2 ABOUT THE FINAL EA

Based on feedback received during the public comment period, and during the additional Environmental Justice Technical Advisory Group discussions, as well as guidance from FHWA, the EA was revised, resulting in a Final EA for the CBD Tolling Program. Throughout the remainder of this document, where the term “EA” is used, it refers to the Final EA as made available to the public in 2023, unless otherwise specified.

The Final EA incorporates revisions and provides new and/or updated information in response to public comments. Importantly, it provides more specificity on earlier mitigation and enhancement commitments, and adds an additional package of mitigation measures to address concerns raised during the public comment period and in discussions with the Environmental Justice Technical Advisory Group.

## 0.3 DIFFERENCES BETWEEN THE EA AND FINAL EA

Within the Final EA, where text has been changed from the EA document submitted for public review in August 2022, it is shown in square brackets using italics and bold font (e.g., *[this is how edited text is marked]*). Where figures or entire tables have been changed, the title of the figure or table is in square brackets using italics and bold font. The revisions are marked in this way to be clearly distinct and visible to readers.

Most of the text in the Final EA remains unchanged from the August 2022 EA. **Table 0-1** below details substantive new or updated information provided in the Final EA. In addition to these updates, text errors were corrected in multiple chapters. Text error corrections are also marked as changed.



Notably, four chapters/appendices are entirely new. To indicate that they are new, the title of these chapters/appendices are marked in square brackets, with text that is bold and italicized. These chapters/appendices include the following:

- **“Foreword”** – this chapter, which explains the process and updates reflected in the Final EA.
- **Appendix 17D, “Technical Memorandum: Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens”** – examines how environmental justice communities with pre-existing air pollution and health burdens could be affected by Project-generated increases or decreases in highway traffic adjacent to these areas – a concern that was raised during the public comment period and in discussions with the Environmental Justice Technical Advisory Group and Environmental Justice Stakeholder Working Group. The Technical Memorandum is a supplemental discussion to the quantitative air quality analysis presented in the EA and informs an expanded **Chapter 17, “Environmental Justice.”**
- **Appendix 17E, “Approach to Mitigating the Effect of CBD Tolls on Low-Income Frequent Drivers”** – provides background information about the development of mitigation to address a potential adverse effect on low-income frequent drivers.
- **Appendix 18, “Agency Coordination and Public Participation”** – contains comments and responses collected during the formal comment period in 2022, as described above. It includes the following sections:
  - **18A: Responses to Frequently Received Comments**
  - **18B: Index of All Submissions**
  - **18C: Comments and Responses** (this includes specific responses, but in many instances references the **Responses to Frequently Received Comments** in **Appendix 18A**)
  - **18D: Form Letter Submissions**

**Table 0-1. New and Updated Information in the Final EA, by Chapter or Appendix**

CHAPTER/ APPENDIX	LOCATION	NEW AND UPDATED INFORMATION
Chapters	"Executive Summary"	Updates to reflect changes made in all other chapters
	Chapter 2, "Project Alternatives"	Corrections to Alternative O-2 in Table 2-2, as well as additions to the table's notes
	Chapter 3, "Environmental Analysis Framework"	Includes analysis of new mitigation commitments in relation to the conclusions of the EA
	Chapter 4A, "Regional Transportation Effects and Modeling"	Updates figures and tables summarizing commuting costs to reflect the effective toll rate in MTA's Staten Island Resident Rebate Program
	Chapter 5C, "Social Conditions: Public Policy"	Reflects latest information on New York State's Climate Leadership and Community Protection Act
	Chapter 6, "Economic Conditions"	Reflects additional analysis on effects to small businesses, and incorporates new mitigation measures
	Chapter 10, "Air Quality"	Includes a direct link to the electronic versions of all the MOVES modeling conducted for the Project; provides additional detail on the PM microscale analysis; and clarifies conclusions for the 12-county air quality study area
	Chapter 16, "Summary of Effects"	Reflects updates to previously identified mitigation and enhancement measures, details about how and when these measures will be implemented, and adds new mitigation commitments <sup>1</sup> ; also includes analysis of new mitigation commitments in relation to the conclusions of the EA
	Chapter 17, "Environmental Justice"	Summarizes supplemental data and additional analysis of existing health and pollutant burdens, and incorporates new mitigation measures
Appendices	Chapter 18, "Agency Coordination and Public Participation"	Includes additional outreach activities that took place after the EA was released for public review
	Appendix 4A.3, "Representative Commuting Costs by Auto and Transit"	Updates to reflect the effective toll rate in MTA's Staten Island Resident Rebate Program
	Appendix 17, "Environmental Justice"	Includes new Appendix 17D, Technical Memorandum and Appendix 17E, Approach to Mitigation for Low-Income Frequent Drivers
	Appendix 18, "Agency Coordination and Public Participation"	New appendix including all comments received during the formal comment period in 2022 and responses to those comments
	Appendix 19, "Section 4(f) Correspondence"	An unsigned letter from Mark Eberle, National Park Service was replaced with a signed copy of the letter

Note: <sup>1</sup> Updated information on mitigation and enhancement measures was also incorporated throughout the following chapters and within the concluding sections of **Subchapter 4C, "Transit"; Subchapter 4E, "Pedestrians and Bicycles"; Chapter 6, "Economic Conditions"; Chapter 7, "Parks and Recreational Resources"; Chapter 8, "Historical and Cultural Resources"; Chapter 10, "Air Quality"; Chapter 13, "Natural Resources"; Chapter 14, "Asbestos-Containing Materials, Lead-Based Paint, Hazardous Wastes, and Contaminated Materials"; Chapter 15, "Construction Effects"; and Chapter 17, "Environmental Justice."**

# Contents

## Executive Summary

<b>1.</b>	<b>Introduction .....</b>	<b>1-1</b>
1.1	OVERVIEW.....	1-1
1.2	PROJECT SETTING.....	1-4
1.2.1	Regional Development Patterns .....	1-6
1.2.2	Traveling to the Manhattan CBD.....	1-7
1.2.3	Traveling within the Manhattan CBD.....	1-9
1.2.4	Commuting to the Manhattan CBD.....	1-9
1.3	PROJECT PURPOSE .....	1-10
1.4	PROJECT NEEDS.....	1-10
1.4.1	The Need to Reduce Vehicle Congestion in the Manhattan CBD .....	1-10
1.4.1.1	Evidence of Congestion .....	1-14
1.4.2	The Need to Create a New Local, Recurring Funding Source for MTA’s Capital Projects .....	1-16
1.5	PROJECT OBJECTIVES.....	1-18
1.6	PROJECT SCHEDULE.....	1-19
1.7	CONTACT INFORMATION .....	1-19
<b>2.</b>	<b>Project Alternatives .....</b>	<b>2-1</b>
2.1	INTRODUCTION .....	2-1
2.2	PREVIOUS STUDIES AND CONCEPTS CONSIDERED .....	2-1
2.3	PRELIMINARY ALTERNATIVES AND THEIR CONSISTENCY WITH THE PROJECT’S PURPOSE AND OBJECTIVES .....	2-2
2.4	DESCRIPTION OF ALTERNATIVES STUDIED IN DETAIL IN THIS ENVIRONMENTAL ASSESSMENT .....	2-8
2.4.1	No Action Alternative.....	2-8
2.4.2	CBD Tolling Alternative .....	2-9
2.4.2.1	Overview .....	2-9
2.4.2.2	Tolling Infrastructure and Tolling System Equipment.....	2-12
2.4.2.3	Logical Termini.....	2-29
2.4.2.4	Tolling Scenarios for Environmental Review .....	2-29
2.4.2.5	Discussion of Effects of Individual Components of Tolling Scenarios .....	2-34
2.5	PREFERRED ALTERNATIVE .....	2-38
<b>3.</b>	<b>Environmental Analysis Framework.....</b>	<b>3-1</b>
3.1	FEDERAL APPROVALS AND CLASS OF ACTION .....	3-1
3.2	COORDINATION WITH FEDERAL AND STATE RESOURCE AGENCIES .....	3-1
3.3	ANALYSIS FRAMEWORK.....	3-2
3.3.1	Study Areas .....	3-3
3.3.1.1	Regional Study Area.....	3-3
3.3.1.2	Local Study Areas.....	3-3
3.3.2	Analysis Years.....	3-5
3.3.3	CBD Tolling Alternative Tolling Scenarios .....	3-5
3.3.4	Social and Economic Data.....	3-7
<b>4.</b>	<b>Transportation .....</b>	<b>4-1</b>
4.1	ROADWAY ACCESS TO THE MANHATTAN CBD.....	4-1
4.2	TRANSIT ACCESS TO THE MANHATTAN CBD .....	4-6
4.2.1	Subways .....	4-8
4.2.2	Port Authority Trans-Hudson .....	4-8
4.2.3	Commuter Rail .....	4-9



Contents

4.2.4	Buses .....	4-10
4.2.5	Ferries.....	4-11
4.2.6	Tram.....	4-12
4.3	BICYCLE AND PEDESTRIAN ACCESS TO THE MANHATTAN CBD .....	4-12
4A.	Regional Transportation Effects and Modeling .....	4A-1
4A.1	OVERVIEW AND CONTEXT .....	4A-1
4A.2	METHODOLOGY .....	4A-1
4A.2.1	Overview of Best Practice Model .....	4A-1
4A.2.2	Modeling of Toll Rates .....	4A-4
4A.3	EVALUATING THE PROJECT .....	4A-5
4A.4	ENVIRONMENTAL CONSEQUENCES .....	4A-8
4A.4.1	No Action Alternative.....	4A-8
4A.4.2	2023 CBD Tolling Alternative .....	4A-9
4A.4.3	2045 CBD Tolling Alternative .....	4A-18
4A.4.4	CBD Tolling Alternative Tolling Scenario Summaries.....	4A-24
4A.4.5	Key Findings .....	4A-24
4A.5	CONCLUSION .....	4A-49
4A.5.1	General Effects.....	4A-49
4A.5.2	Crossing Credits.....	4A-50
4A.5.3	Diversions/Toll Avoidance .....	4A-50
4A.5.4	Taxis and FHV's .....	4A-51
4A.6	SUMMARY OF EFFECTS .....	4A-51
4B.	Highways and Local Intersections.....	4B-1
4B.1	INTRODUCTION .....	4B-1
4B.2	SUMMARY OF EFFECTS OF THE CBD TOLLING ALTERNATIVE TOLLING SCENARIOS AND DETERMINATION OF TOLLING SCENARIO WITH LARGEST INCREASE IN LOCAL TRAFFIC VOLUMES .....	4B-3
4B.2.1	Summary of Highway Analysis to Determine Representative Tolling Scenario with Largest Increases in Traffic .....	4B-4
4B.2.2	Summary of Intersection Analysis to Determine Representative Tolling Scenario with Highest Potential Increase in Traffic .....	4B-9
4B.3	OVERVIEW AND CONTEXT .....	4B-12
4B.3.1	Overview of Roadways and Highways Leading to the Manhattan CBD.....	4B-12
4B.4	HIGHWAY ASSESSMENT .....	4B-18
4B.4.1	Methodology.....	4B-18
4B.4.2	Long Island Expressway (I-495) Leading to the Queens-Midtown Tunnel .....	4B-24
4B.4.3	Gowanus Expressway Leading to I-278 Hugh L. Carey Tunnel.....	4B-31
4B.4.4	Staten Island Expressway Leading to the Verrazzano-Narrows Bridge.....	4B-40
4B.4.5	I-78 and Route 139 Approach to the Holland Tunnel.....	4B-48
4B.4.6	NJ Route 495 Approach to the Lincoln Tunnel.....	4B-51
4B.4.7	Trans-Manhattan/Cross Bronx Expressway between the George Washington Bridge and I-87.....	4B-55
4B.4.8	FDR Drive/Lower East Side—East 10th Street to the Brooklyn Bridge .....	4B-59
4B.4.9	Bayonne Bridge .....	4B-63
4B.4.10	Eastern Spur of I-95 New Jersey Turnpike .....	4B-65
4B.4.11	RFK Bridge between Queens and Ramps to/from Manhattan.....	4B-68
4B.5	POTENTIAL TRAFFIC EFFECTS ON CENTRAL PARK ROADWAYS.....	4B-80
4B.6	INTERSECTION IMPACT ASSESSMENT .....	4B-82
4B.6.1	Methodology.....	4B-82
4B.6.2	Affected Environment (including No Action Alternative).....	4B-87
4B.6.3	Environmental Consequences.....	4B-95

4B.6.4	Summary of Local Intersection Performance for Scenario(s) with Highest Increase in Traffic .....	4B-101
4B.7	CONCLUSION .....	4B-108
4C.	Transit .....	4C-1
4C.1	INTRODUCTION .....	4C-1
4C.1.1	Traveling To and Within the Manhattan CBD .....	4C-4
4C.2	METHODOLOGY AND ASSUMPTIONS .....	4C-5
4C.2.1	Application of the New York City Environmental Quality Review for Assessment of Transit Effects .....	4C-5
4C.3	AFFECTED ENVIRONMENT.....	4C-7
4C.3.1	Regional Transit Environment.....	4C-7
4C.3.2	Summary of Transit Service by Provider .....	4C-10
4C.3.3	Transit Ridership Overview .....	4C-17
4C.3.4	Existing Volumes Entering the Manhattan CBD (2019).....	4C-18
4C.4	ENVIRONMENTAL CONSEQUENCES .....	4C-21
4C.4.1	No Action Alternative.....	4C-21
4C.4.2	CBD Tolling Alternative .....	4C-21
4C.5	CONCLUSION .....	4C-65
4D.	Parking .....	4D-1
4D.1	INTRODUCTION .....	4D-1
4D.2	METHODOLOGY .....	4D-1
4D.3	AFFECTED ENVIRONMENT.....	4D-4
4D.3.1	Regional Study Area.....	4D-4
4D.3.2	New York City Outside the Manhattan CBD .....	4D-5
4D.3.3	Manhattan CBD .....	4D-6
4D.4	ENVIRONMENTAL CONSEQUENCES .....	4D-8
4D.4.1	No Action Alternative.....	4D-8
4D.4.2	CBD Tolling Alternative .....	4D-8
4D.5	CONCLUSION .....	4D-11
4E.	Pedestrians and Bicycles .....	4E-1
4E.1	INTRODUCTION .....	4E-1
4E.2	PEDESTRIAN CIRCULATION.....	4E-1
4E.2.1	Methodology.....	4E-1
4E.2.2	Affected Environment .....	4E-6
4E.2.3	Environmental Consequences.....	4E-8
4E.3	BICYCLES.....	4E-12
4E.3.1	Methodology.....	4E-12
4E.3.2	Affected Environment .....	4E-12
4E.3.3	Environmental Consequences.....	4E-14
4E.4	VEHICULAR AND PEDESTRIAN SAFETY.....	4E-15
4E.4.1	Methodology.....	4E-15
4E.4.2	Affected Environment .....	4E-15
4E.4.3	Environmental Consequences.....	4E-16
4E.5	CONCLUSION .....	4E-17
5.	Social Conditions.....	5-1
5A.	Population Characteristics and Community Cohesion .....	5A-1
5A.1	INTRODUCTION .....	5A-1
5A.2	METHODOLOGY .....	5A-1
5A.2.1	Analysis Framework.....	5A-1

## Contents

5A.2.2	Study Area.....	5A-2
5A.2.3	Data Sources .....	5A-2
<b>5A.3</b>	<b>AFFECTED ENVIRONMENT.....</b>	<b>5A-3</b>
5A.3.1	Regional Context.....	5A-3
5A.3.2	Community Cohesion .....	5A-8
5A.3.3	Community Facilities and Services.....	5A-9
5A.3.4	Population Characteristics and Protected Social Groups .....	5A-10
5A.3.5	Access to Employment in the Manhattan CBD.....	5A-13
<b>5A.4</b>	<b>ENVIRONMENTAL CONSEQUENCES .....</b>	<b>5A-17</b>
5A.4.1	No Action Alternative.....	5A-17
5A.4.2	CBD Tolling Alternative .....	5A-17
<b>5A.5</b>	<b>CONCLUSION.....</b>	<b>5A-44</b>
<b>5B.</b>	<b>Neighborhood Character .....</b>	<b>5B-1</b>
<b>5B.1</b>	<b>INTRODUCTION .....</b>	<b>5B-1</b>
<b>5B.2</b>	<b>METHODOLOGY .....</b>	<b>5B-1</b>
5B.2.1	Framework for Neighborhood Character Analysis .....	5B-1
5B.2.2	Study Areas .....	5B-1
<b>5B.3</b>	<b>AFFECTED ENVIRONMENT.....</b>	<b>5B-3</b>
5B.3.1	Manhattan CBD Study Area.....	5B-3
5B.3.2	60th Street Manhattan CBD Boundary Study Area .....	5B-7
<b>5B.4</b>	<b>ENVIRONMENTAL CONSEQUENCES .....</b>	<b>5B-10</b>
5B.4.1	No Action Alternative.....	5B-10
5B.4.2	CBD Tolling Alternative .....	5B-11
<b>5B.5</b>	<b>CONCLUSION.....</b>	<b>5B-17</b>
<b>5C.</b>	<b>Public Policy .....</b>	<b>5C-1</b>
<b>5C.1</b>	<b>INTRODUCTION .....</b>	<b>5C-1</b>
<b>5C.2</b>	<b>PUBLIC POLICIES APPLICABLE TO THE PROJECT .....</b>	<b>5C-1</b>
5C.2.1	OneNYC 2050: Building a Strong and Fair City, New York City's Strategic Plan.....	5C-1
5C.2.2	Regional Transportation Plans.....	5C-1
5C.2.3	New York State Smart Growth Public Infrastructure Policy Act .....	5C-5
5C.2.4	Climate Leadership and Community Protection Act.....	5C-5
<b>5C.3</b>	<b>CONSISTENCY WITH APPLICABLE PUBLIC POLICIES .....</b>	<b>5C-6</b>
5C.3.1	No Action Alternative.....	5C-6
5C.3.2	CBD Tolling Alternative .....	5C-6
<b>5C.4</b>	<b>CONCLUSION.....</b>	<b>5C-8</b>
<b>6.</b>	<b>Economic Conditions .....</b>	<b>6-1</b>
<b>6.1</b>	<b>INTRODUCTION .....</b>	<b>6-1</b>
<b>6.2</b>	<b>METHODOLOGY .....</b>	<b>6-1</b>
6.2.1	Framework for Economic Conditions Analysis.....	6-1
6.2.2	Study Areas .....	6-2
6.2.3	Data and Information Sources.....	6-2
<b>6.3</b>	<b>REGIONAL ASSESSMENT.....</b>	<b>6-3</b>
6.3.1	Regional Study Area.....	6-3
6.3.2	Affected Environment .....	6-3
6.3.2.1	Employed Labor Force and Jobs.....	6-4
6.3.2.2	Means of Transportation to Work.....	6-14
6.3.2.3	Means of Transportation to Work for Different Industry Categories .....	6-16
6.3.2.4	Commuting Into, Out of, and Within the Manhattan CBD.....	6-18
6.3.2.5	Non-Work-Related Journeys .....	6-31
6.3.2.6	Vehicle-Dependent Industries .....	6-32
6.3.3	Environmental Consequences.....	6-41

6.3.3.1	No Action Alternative .....	6-41
6.3.3.2	CBD Tolling Alternative .....	6-47
<b>6.4</b>	<b>NEIGHBORHOOD-LEVEL ASSESSMENT .....</b>	<b>6-70</b>
6.4.1	<i>Study Areas .....</i>	<i>6-71</i>
6.4.1.1	Transportation Hubs .....	6-71
6.4.1.2	Neighborhood Streets Experiencing Increases or Decreases in Traffic .....	6-72
6.4.1.3	Neighborhoods Near the 60th Street Manhattan CBD Boundary .....	6-73
6.4.2	<i>Affected Environment .....</i>	<i>6-73</i>
6.4.3	<i>Environmental Consequences .....</i>	<i>6-79</i>
6.4.3.1	No Action Alternative .....	6-79
6.4.3.2	CBD Tolling Alternative .....	6-79
<b>6.5</b>	<b>CONCLUSION .....</b>	<b>6-80</b>
<b>7.</b>	<b>Parks and Recreational Resources .....</b>	<b>7-1</b>
7.1	<b>INTRODUCTION .....</b>	<b>7-1</b>
7.2	<b>AFFECTED ENVIRONMENT.....</b>	<b>7-1</b>
7.2.1	<i>Inventory of Publicly Accessible Open Space in the Parks Study Area .....</i>	<i>7-1</i>
7.2.2	<i>Central Park.....</i>	<i>7-2</i>
7.2.3	<i>High Line .....</i>	<i>7-15</i>
7.3	<b>ENVIRONMENTAL CONSEQUENCES .....</b>	<b>7-17</b>
7.3.1	<i>No Action Alternative.....</i>	<i>7-17</i>
7.3.2	<i>CBD Tolling Alternative .....</i>	<i>7-17</i>
7.3.2.1	Overview of Potential Effects on Parks in the Manhattan CBD .....	7-17
7.3.2.2	Potential Effects on Central Park.....	7-18
7.3.2.3	Potential Effects on the High Line .....	7-29
7.3.2.4	Effects on Parks Protected by Section 4(f) of the U.S. Department of Transportation Act .....	7-29
7.3.2.5	Effects on Parks that Have Received Section 6(f) Funding.....	7-29
7.3.2.6	Effects on Parks that Have Received Section 1010 Funding .....	7-31
7.4	<b>CONCLUSION .....</b>	<b>7-31</b>
<b>8.</b>	<b>Historic and Cultural Resources .....</b>	<b>8-1</b>
8.1	<b>INTRODUCTION .....</b>	<b>8-1</b>
8.2	<b>SECTION 106 PROCESS .....</b>	<b>8-1</b>
8.3	<b>IDENTIFICATION OF HISTORIC PROPERTIES.....</b>	<b>8-1</b>
8.4	<b>ASSESSMENT OF EFFECTS.....</b>	<b>8-3</b>
8.4.1	<i>No Action Alternative.....</i>	<i>8-3</i>
8.4.2	<i>CBD Tolling Alternative .....</i>	<i>8-3</i>
8.4.2.1	Effects on Historic Sites Protected by Section 4(f) of the U.S. Department of Transportation Act .....	8-11
8.5	<b>CONCLUSION .....</b>	<b>8-11</b>
8.6	<b>[FINDINGS] .....</b>	<b>8-13</b>
<b>9.</b>	<b>Visual Resources .....</b>	<b>9-1</b>
9.1	<b>INTRODUCTION .....</b>	<b>9-1</b>
9.2	<b>AFFECTED ENVIRONMENT.....</b>	<b>9-1</b>
9.3	<b>ENVIRONMENTAL CONSEQUENCES .....</b>	<b>9-2</b>
9.4	<b>CONCLUSION .....</b>	<b>9-2</b>
<b>10</b>	<b>Air Quality .....</b>	<b>10-1</b>
10.1	<b>INTRODUCTION .....</b>	<b>10-1</b>
10.1.1	<i>Context.....</i>	<i>10-1</i>
10.1.2	<i>Regulations .....</i>	<i>10-1</i>
10.1.3	<i>National and State Ambient Air Quality Standards .....</i>	<i>10-2</i>
10.1.4	<i>Attainment Status.....</i>	<i>10-2</i>



## Contents

10.1.5	<i>Mobile Source Air Toxics</i> .....	10-5
10.1.5.1	Incomplete or Unavailable Information for Project-Specific Mobile Source Air Toxics Health Impacts Analysis .....	10-7
10.1.6	<i>Climate Change and Greenhouse Gases</i> .....	10-9
10.1.7	<i>Methodology</i> .....	10-10
10.1.7.1	Mesoscale, MSAT, and GHG Analysis .....	10-10
10.1.7.2	Microscale Analysis .....	10-14
10.1.7.3	Carbon Monoxide Screening .....	10-15
10.1.7.4	Particulate Matter Screening (Determining Project of Air Quality Concern) .....	10-15
10.1.7.5	Highway Link Analyses .....	10-16
10.2	<b>AFFECTED ENVIRONMENT</b> .....	10-17
10.3	<b>ENVIRONMENTAL CONSEQUENCES</b> .....	10-20
10.3.1	<i>No Action Alternative</i> .....	10-20
10.3.2	<i>CBD Tolling Alternative</i> .....	10-21
10.3.2.1	Mesoscale, MSAT, and GHG Analyses .....	10-21
10.3.2.2	Microscale Screening Analysis .....	10-42
10.3.2.3	Highway Link Analysis .....	10-46
10.4	<b>TRANSPORTATION CONFORMITY DETERMINATION</b> .....	10-49
10.5	<b>CONCLUSION</b> .....	10-49
11.	<b>Energy</b> .....	11-1
11.1	<b>INTRODUCTION</b> .....	11-1
11.2	<b>AFFECTED ENVIRONMENT</b> .....	11-1
11.3	<b>ENVIRONMENTAL CONSEQUENCES</b> .....	11-2
11.3.1	<i>No Action Alternative</i> .....	11-3
11.3.2	<i>CBD Tolling Alternative</i> .....	11-3
11.3.3	<i>Construction Effects</i> .....	11-4
11.4	<b>CONCLUSION</b> .....	11-4
12	<b>Noise</b> .....	12-1
12.1	<b>INTRODUCTION</b> .....	12-1
12.1.1	<i>Context</i> .....	12-1
12.1.2	<i>Methodology</i> .....	12-1
12.1.2.1	Summary Effects of All Tolling Scenarios and Determination of Worst-Case Tolling Scenario .....	12-3
12.1.2.2	CEQR Noise Criteria .....	12-4
12.1.2.3	CEQR Guidance for Estimating Projected Noise-Level Changes .....	12-4
12.2	<b>AFFECTED ENVIRONMENT</b> .....	12-7
12.3	<b>ENVIRONMENTAL CONSEQUENCES</b> .....	12-7
12.3.1	<i>No Action Alternative</i> .....	12-7
12.3.2	<i>CBD Tolling Alternative</i> .....	12-7
12.3.2.1	Bridge and Tunnel Crossing Noise Assessment .....	12-7
12.3.2.2	Local Street Noise Assessment .....	12-8
12.4	<b>CONCLUSION</b> .....	12-11
13.	<b>Natural Resources</b> .....	13-1
13.1	<b>INTRODUCTION</b> .....	13-1
13.2	<b>AFFECTED ENVIRONMENT</b> .....	13-1
13.2.1	<i>Wetlands</i> .....	13-1
13.2.1.1	New York State Jurisdiction Wetlands .....	13-1
13.2.1.2	Federal Jurisdiction Wetlands .....	13-3
13.2.2	<i>Surface Waters and Navigable Waters</i> .....	13-3
13.2.3	<i>Wild, Scenic, and Recreational Rivers</i> .....	13-3
13.2.4	<i>Floodplains</i> .....	13-3
13.2.5	<i>Coastal Resources</i> .....	13-3

13.2.6	Groundwater Resources, Aquifers, and Reservoirs.....	13-6
13.2.7	Stormwater Management .....	13-6
13.2.8	General Ecology and Wildlife Resources.....	13-6
13.2.9	Endangered and Threatened Species.....	13-7
13.2.10	Essential Fish Habitat.....	13-8
13.2.11	Critical Environmental Areas, Habitat Areas, Wildlife Refuges, and Wildfowl Refuges.....	13-8
<b>13.3</b>	<b>ENVIRONMENTAL CONSEQUENCES .....</b>	<b>13-8</b>
13.3.1	No Action Alternative.....	13-8
13.3.2	CBD Tolling Alternative .....	13-8
13.3.2.1	Wetlands.....	13-9
13.3.2.2	Surface Waters and Navigable Waters.....	13-9
13.3.2.3	Floodplains.....	13-10
13.3.2.4	Coastal Resources.....	13-10
13.3.2.5	Groundwater Resources, Aquifers, and Reservoirs.....	13-10
13.3.2.6	Stormwater Management .....	13-11
13.3.2.7	General Ecology and Wildlife Resources .....	13-11
13.3.2.8	Endangered and Threatened Species.....	13-12
13.3.2.9	Essential Fish Habitat.....	13-13
13.3.2.10	Invasive Species .....	13-13
<b>13.4</b>	<b>CONCLUSION .....</b>	<b>13-13</b>
<b>13.5</b>	<b>[FINDINGS] .....</b>	<b>13-15</b>
13.5.1	Executive Order 11988: Floodplains Management .....	13-15
13.5.2	Coastal Zone Management Act .....	13-15
<b>14.</b>	<b>Asbestos-Containing Materials, Lead-Based Paint, Hazardous Wastes, and Contaminated Materials.....</b>	<b>14-1</b>
14.1	INTRODUCTION .....	14-1
14.2	AFFECTED ENVIRONMENT.....	14-1
14.3	ENVIRONMENTAL CONSEQUENCES .....	14-2
14.3.1	No Action Alternative.....	14-2
14.3.2	CBD Tolling Alternative .....	14-2
14.4	CONCLUSION .....	14-4
<b>15.</b>	<b>Construction Effects.....</b>	<b>15-1</b>
15.1	INTRODUCTION .....	15-1
15.2	AFFECTED ENVIRONMENT.....	15-1
15.3	ENVIRONMENTAL CONSEQUENCES .....	15-1
15.3.1	No Action Alternative.....	15-1
15.3.2	CBD Tolling Alternative .....	15-1
15.4	CONCLUSION .....	15-6
<b>16.</b>	<b>Summary of Effects.....</b>	<b>16-1</b>
16.1	INTRODUCTION .....	16-1
16.2	SUMMARY OF DIRECT AND REASONABLY FORESEEABLE EFFECTS IDENTIFIED IN THIS EA.....	16-1
16.2.1	Direct Effects.....	16-1
16.2.2	Indirect Effects .....	16-2
16.2.3	Cumulative Effects .....	16-23
16.2.4	Tolling Scenarios .....	16-25
16.2.4.1	Tolling Scenarios A, B, C, D, E, F, and G .....	16-25
16.2.4.2	Tolling Scenario B with 30 Percent Higher Tolls.....	16-28
16.2.4.3	Additional Analyses of Caps and Exemptions for Taxis and FHV's .....	16-29
16.2.4.4	[Additional Analyses of Mitigation Measures Included in the Final EA].....	16-30
16.3	SENSITIVITY ANALYSIS OF EAST SIDE ACCESS PROJECT .....	16-31
16.3.1.1	Subways .....	16-32
16.3.1.2	Parking .....	16-34

## Contents

16.3.1.3	Pedestrians and Bicyclists .....	16-34
<b>17</b>	<b>Environmental Justice .....</b>	<b>17-1</b>
17.1	INTRODUCTION .....	17-1
17.2	REGULATORY CONTEXT .....	17-1
17.3	METHODOLOGY .....	17-2
17.3.1	Overview .....	17-2
17.3.2	Data Sources .....	17-3
17.4	ENVIRONMENTAL JUSTICE STUDY AREAS.....	17-3
17.4.1	Local Study Area.....	17-5
17.4.2	Regional Study Area.....	17-6
17.5	EXISTING MINORITY AND LOW-INCOME POPULATIONS IN THE ENVIRONMENTAL JUSTICE STUDY AREAS.....	17-8
17.5.1	Defining Minority and Low-Income Populations .....	17-8
17.5.2	Environmental Justice Populations in the Local Study Area .....	17-9
17.5.3	Environmental Justice Populations in the Regional Study Area.....	17-9
17.5.3.1	Regional Overview .....	17-9
17.5.3.2	Regional Travel Characteristics.....	17-16
17.5.3.3	Minority Commuters to Manhattan CBD from the Regional Study Area.....	17-18
17.5.3.4	Low-Income Commuters to Manhattan CBD from the Regional Study Area .....	17-21
17.5.3.5	Businesses Dependent on Vehicles: Taxi and For-Hire Vehicles .....	17-22
17.6	POTENTIAL ADVERSE EFFECTS ON ENVIRONMENTAL JUSTICE POPULATIONS.....	17-24
17.6.1	Potential Adverse Effects in the Local Study Area .....	17-24
17.6.1.1	Increased Traffic Congestion on Highway Segments .....	17-25
17.6.1.2	Changes in Traffic Conditions at Local Intersections.....	17-26
17.6.1.3	Traffic-Related Effects on Air Quality .....	17-28
17.6.1.4	Traffic-Related Effects on Noise .....	17-43
17.6.1.5	Increases to Transit Ridership .....	17-44
17.6.1.6	Changes in Passenger Flows at Transit Stations.....	17-44
17.6.1.7	Changes in Pedestrian Circulation on Sidewalks Near Transit Hubs.....	17-45
17.6.1.8	Potential for Indirect Displacement .....	17-46
17.6.1.9	Potential Effects on Cost of Goods.....	17-47
17.6.2	Potential Adverse Effects in the Regional Study Area.....	17-48
17.6.2.1	Increased Cost for Drivers .....	17-48
17.6.2.2	Effects on Taxi and For-Hire Vehicle Drivers in New York City.....	17-50
17.6.3	<i>[Summary of] Potential Adverse Effects on Environmental Justice Populations .....</i>	<i>17-55</i>
17.6.4	Offsetting Benefits .....	17-62
17.7	POTENTIAL DISPROPORTIONATELY HIGH AND ADVERSE EFFECTS .....	17-63
17.7.1	<i>[Potential Effects of Traffic on Communities with Associated Pre-Existing Air Pollutant and Health Burdens].....</i>	<i>17-63</i>
17.7.2	Evaluation of Adverse Effect on Minority and Low-Income Drivers .....	17-67
17.7.2.1	Minority Drivers .....	17-67
17.7.2.2	Low-Income Drivers .....	17-67
17.7.3	Evaluation of Adverse Effect on Taxi and FHV Drivers.....	17-72
17.8	CONCLUSION .....	17-72
17.9	ENVIRONMENTAL JUSTICE PUBLIC ENGAGEMENT.....	17-81
17.9.1	Environmental Justice Webinars.....	17-81
17.9.1.1	Environmental Justice Webinars 1 through 6 .....	17-83
17.9.1.2	Environmental Justice Webinars 7 through 9 .....	17-83
17.9.2	Environmental Justice Technical Advisory Group .....	17-84
17.9.3	Environmental Justice Stakeholder Working Group .....	17-86
17.9.4	<i>[EA Public Review and] Future Outreach to Environmental Justice Populations .....</i>	<i>17-87</i>
<b>18</b>	<b>Agency Coordination and Public Participation.....</b>	<b>18-1</b>
18.1	INTRODUCTION .....	18-1

18.2	COORDINATION WITH COOPERATING AND PARTICIPATING AGENCIES .....	18-1
18.2.1	Agencies Invited to Participate in the Process .....	18-1
18.2.2	Agency Coordination .....	18-3
18.3	PUBLIC INVOLVEMENT ACTIVITIES .....	18-3
18.3.1	Public Outreach Tools and Efforts .....	18-4
18.3.2	Early Outreach Webinars .....	18-5
18.3.3	Environmental Justice Advisory and Working Groups .....	18-7
18.3.4	Coordination with Stakeholder Groups .....	18-7
18.3.5	Outreach During Construction .....	18-8
18.4	OVERVIEW OF COMMENTS RECEIVED DURING EARLY OUTREACH ACTIVITIES .....	18-8
18.4.1	Purpose and Need .....	18-9
18.4.2	Transportation – Highways and Local Intersections .....	18-9
18.4.3	Transportation – Parking .....	18-10
18.4.4	Transportation – Pedestrians and Bicycles .....	18-10
18.4.5	Social Conditions – Population Characteristics and Community Cohesion .....	18-10
18.4.6	Social Conditions – Neighborhood Character .....	18-11
18.4.7	Social Conditions – Public Policy .....	18-11
18.4.8	Economic Conditions .....	18-12
18.4.9	Parks and Recreational Resources .....	18-12
18.4.10	Visual Resources .....	18-13
18.4.11	Air Quality .....	18-13
18.4.12	Energy .....	18-14
18.4.13	Noise .....	18-14
18.4.14	Environmental Justice .....	18-14
18.4.15	Comments Outside the Scope of this Environmental Assessment .....	18-15
18.5	AVAILABILITY OF TH[E]EA, EA PUBLIC HEARINGS, AND WAYS TO PROVIDE COMMENTS .....	18-15
18.5.1	Repositories for Reviewing the Environmental Assessment .....	18-16
18.5.2	Virtual Public Hearings During Environmental Assessment Comment Period .....	18-21
18.6	[COMMENTS RECEIVED DURING THE FORMAL OUTREACH PERIOD] .....	18-22
18.6.1	Appendix 18A: Responses to Frequently Received Comments .....	18-22
18.6.2	Appendix 18B: Index of All Submissions .....	18-22
18.6.3	Appendix 18C: Comments and Responses .....	18-23
18.6.4	Appendix 18D: Form Letter Submissions] .....	18-23
18.7	AVAILABILITY OF THE DRAFT DECISION DOCUMENT AND FINAL EA .....	18-23
19.	Section 4(f) Evaluation .....	19-1
19.1	INTRODUCTION .....	19-1
19.2	REGULATORY FRAMEWORK .....	19-1
19.3	DESCRIPTION OF THE PROPOSED ACTION .....	19-3
19.4	PROJECT ALTERNATIVES .....	19-4
19.5	HISTORIC SITES .....	19-4
19.6	USE OF PUBLICLY OWNED PARKS, RECREATION AREAS, AND WILDLIFE AND WATERFOWL REFUGES .....	19-18
19.6.1	Recreation Areas and Wildlife and Waterfowl Refuges .....	19-18
19.6.2	Publicly Owned Parks .....	19-18
19.6.2.1	High Line .....	19-26
19.6.2.2	Central Park .....	19-26
19.7	PUBLIC INVOLVEMENT AND SECTION 4(f) COORDINATION .....	19-30
19.8	CONCLUSION .....	19-30
20.	Short-Term Uses of the Environment and Maintenance and Enhancement of Long-Term Productivity .....	20-1
21.	Irreversible and Irretrievable Commitment of Resources .....	21-1



## Contents

<b>List of Preparers .....</b>	<b>1</b>
<b>AGENCIES .....</b>	<b>2</b>
<i>Federal Highway Administration 1200 New Jersey Avenue, SE Washington, DC, 20590.....</i>	<i>2</i>
<i>Triborough Bridge and Tunnel Authority 2 Broadway New York, NY 10004 .....</i>	<i>2</i>
<i>New York City Department of Transportation 55 Water Street New York, NY 10041 .....</i>	<i>4</i>
<i>New York State Department of Transportation 50 Wolf Road Colonie, NY 12205.....</i>	<i>5</i>
<b>FIRMS .....</b>	<b>5</b>
<i>AKRF, Inc. 440 Park Avenue South, 7th Floor New York, NY 10016 .....</i>	<i>5</i>
<i>EA Harper Consulting 40 West 135th Street, #4C New York, NY 10037-2505.....</i>	<i>6</i>
<i>FHI Studio 11 Hanover Square, 3rd Floor New York, NY 10005 .....</i>	<i>6</i>
<i>HDR 500 Seventh Avenue New York, New York 10018 .....</i>	<i>6</i>
<i>Resource Systems Group, Inc. 55 Railroad Row White River Junction, VT 05001.....</i>	<i>7</i>
<i>Sive, Paget &amp; Riesel P.C. 560 Lexington Avenue, 15<sup>th</sup> Floor New York, N.Y. 10022 .....</i>	<i>7</i>
<i>TransCore 33 Whitehall St, Suite 1401 New York, NY 10004.....</i>	<i>7</i>
<i>WSP USA One Penn Plaza, 4th Floor New York, NY 10119 .....</i>	<i>7</i>

## Tables

---

Table 1-1.	Project Schedule.....	1-19
Table 2-1.	Preliminary Alternatives Considered.....	2-4
Table 2-2.	Results of Preliminary Alternatives Screening <sup>1</sup> .....	2-6
Table 2-3.	Tolling Scenarios Evaluated for the CBD Tolling Alternative .....	2-31
Table 2-4.	Comparison of Evaluation Results for the No Action and CBD Tolling Alternatives .....	2-39
Table 2-5.	Comparison of Evaluation Results for CBD Tolling Alternative Tolling Scenarios .....	2-40
Table 4-1.	Bridges and Tunnels Connecting to Manhattan CBD.....	4-4
Table 4-2.	Bridges Connecting to Manhattan Outside the Manhattan CBD .....	4-4
Table 4-3.	2022 Passenger Vehicle Toll Rates on Bridges and Tunnels Connecting to Manhattan .....	4-5
Table 4A-1.	Forecast Growth in Daily Vehicles Entering the Manhattan CBD: No Action Alternative .....	4A-8
Table 4A-2.	Forecast Growth in All Vehicle Daily Vehicle-Miles Traveled: No Action Alternative ...	4A-10
Table 4A-3.	Changes in Manhattan CBD Total Daily Mode Share: No Action Alternative.....	4A-11
Table 4A-4.	Daily Vehicles <sup>1</sup> Entering the Manhattan CBD by Crossing Location: No Action Alternative and Tolling Scenarios (2023) .....	4A-12
Table 4A-5.	Percentage Change (compared to No Action Alternative) in Daily Vehicles Entering the Manhattan CBD by Crossing Location and Tolling Scenario (2023) .....	4A-12
Table 4A-6.	Daily Vehicle-Miles Traveled: No Action Alternative and CBD Tolling Alternative, by Tolling Scenario (2023) .....	4A-14
Table 4A-7.	Percentage Change (compared to No Action Alternative) in Daily Vehicle-Miles Traveled by Tolling Scenario (2023) .....	4A-15
Table 4A-8.	Daily Manhattan CBD Journey Mode Share (compared to No Action Alternative) by Tolling Scenario (2023) .....	4A-16
Table 4A-9.	Daily Manhattan CBD-Related Auto-Based Vehicle Person-Journeys (compared to No Action Alternative) by Tolling Scenario (2023).....	4A-17
Table 4A-10.	Daily Manhattan CBD-Related Transit Journeys (compared to No Action Alternative) by Tolling Scenario (2023).....	4A-17

Table 4A-11.	Daily Vehicles Entering the Manhattan CBD by Crossing Locations: No Action Alternative and Tolling Scenarios (2045) .....	4A-19
Table 4A-12.	Percentage Change (compared to No Action Alternative) in Daily Vehicles Entering the Manhattan CBD by Crossing Locations and Tolling Scenario (2045) .....	4A-19
Table 4A-13.	Daily Vehicle-Miles Traveled: No Action Alternative and Tolling Scenarios (2045) .....	4A-20
Table 4A-14.	Percentage Change (compared to No Action Alternative) in Daily Vehicle-Miles Traveled by Tolling Scenario (2045) .....	4A-21
Table 4A-15.	Daily Manhattan CBD Journey Mode Share: No Action Alternative and Tolling Scenarios (2045) .....	4A-22
Table 4A-16.	Daily Manhattan CBD-Related Auto-Based Vehicle Person-Journeys: No Action Alternative and Tolling Scenarios (2045) .....	4A-23
Table 4A-17.	Daily Manhattan CBD-Related Transit Journeys: No Action Alternative and Tolling Scenarios (2045) .....	4A-23
Table 4A-18.	Percentage Change in Round-Trip Driving Costs for Representative Route by Auto to the World Trade Center Using E-ZPass at 7:30 a.m. ....	4A-29
Table 4A-19.	Total Tolls, Round-Trip, for Representative Routes by Auto to the World Trade Center Using E-ZPass at 7:30 a.m. ....	4A-30
Table 4A-20.	Brooklyn Bridge Average Weekday Vehicle Volumes (Manhattan-Bound): No Action Alternative and Tolling Scenarios .....	4A-31
Table 4A-21.	Hugh L. Carey Tunnel Average Weekday Vehicle Volumes (Manhattan-Bound): No Action Alternative and Tolling Scenarios .....	4A-32
Table 4A-22.	Average Daily Truck Trips through the Manhattan CBD: No Action Alternative and Tolling Scenarios .....	4A-32
Table 4A-23.	Vehicle-Miles Traveled Percentage Changes by Tolling Scenario in Environmental Justice Census Tracts by Subarea (2023) .....	4A-35
Table 4A-24.	Vehicle-Miles Traveled Percentage Changes by Tolling Scenario in Non-Environmental Justice Census Tracts by Subarea (2023) .....	4A-36
Table 4A-25.	Staten Island Daily Vehicle-Miles Traveled by Roadway Type (2023): No Action Alternative and Tolling Scenarios .....	4A-39
Table 4A-26.	Staten Island Daily Vehicle-Miles Traveled on Highways by Vehicle Type (2023): No Action Alternative and Tolling Scenarios .....	4A-39
Table 4A-27.	Bronx Daily Vehicle-Miles Traveled by Roadway Type (2023): No Action Alternative and Tolling Scenarios .....	4A-40
Table 4A-28.	Bronx Daily Vehicle-Miles Traveled on Highways by Vehicle Type (2023): No Action Alternative and Tolling Scenarios .....	4A-40
Table 4A-29.	Cross-Bronx Daily Vehicle-Miles Traveled by Vehicle Type (2023): No Action Alternative and Tolling Scenarios .....	4A-41
Table 4A-30.	Cross-Bronx Daily Truck Volume Changes (2023): No Action Alternative and Tolling Scenarios .....	4A-42
Table 4A-31.	Bronx Highways excluding Cross Bronx Expressway Daily Vehicle-Miles Traveled by Vehicle Type (2023): No Action Alternative and Tolling Scenarios .....	4A-42
Table 4A-32.	Select Bronx Highways Daily Vehicle-Miles Traveled by Vehicle Type (2023): No Action Alternative and Tolling Scenarios .....	4A-43
Table 4A-33.	Taxi and FHV Manhattan CBD Tolling Policy .....	4A-45
Table 4A-34.	Projected Percentage of Total Revenue/Percentage of Total Trips .....	4A-48
Table 4A-35.	Summary of Effects of Tolling Scenarios on Regional Transportation Effects and Modeling .....	4A-52
Table 4B-1.	Peak-Hour Incremental Traffic Volumes: Comparison of Tolling Scenarios* .....	4B-5

## Contents

Table 4B-2.	Instances of Intersections Meeting/Exceeding the Traffic Volume Screening Threshold in an Analysis Hour: Comparison of Tolling Scenarios.....	4B-10
Table 4B-3.	Analysis Type and Criteria Used for the Determination of Adverse Effects.....	4B-23
Table 4B-4.	Existing Conditions: Long Island Expressway (I-495): The Queens-Midtown Tunnel ...	4B-26
Table 4B-5.	Long Island Expressway (I-495) Approach to Queens-Midtown Tunnel – AM (8:00 a.m. to 9:00 a.m.).....	4B-28
Table 4B-6.	Long Island Expressway (I-495) Approach to Queens-Midtown Tunnel – MD (1:00 p.m. to 2:00 p.m.) .....	4B-29
Table 4B-7.	Long Island Expressway (I-495) Approach to Queens-Midtown Tunnel – PM (5:00 p.m. to 6:00 p.m.) .....	4B-30
Table 4B-8.	Existing Conditions: Gowanus Expressway Leading to Hugh L. Carey Tunnel.....	4B-33
Table 4B-9.	Hugh L. Carey Tunnel – AM (8:00 a.m. to 9:00 a.m.).....	4B-35
Table 4B-10.	Hugh L. Carey Tunnel – MD (1:00 p.m. to 2:00 p.m.) .....	4B-36
Table 4B-11.	Hugh L. Carey Tunnel – PM (5:00 p.m. to 6:00 p.m.) .....	4B-37
Table 4B-12.	Existing Conditions: Staten Island Expressway (I-278) Westbound – Verrazzano-Narrows Bridge to Hylan Boulevard .....	4B-42
Table 4B-13.	Staten Island Expressway (I-278) Westbound—Verrazzano-Narrows Bridge to Hylan Boulevard – AM (7:00 a.m. to 8:00 a.m.).....	4B-44
Table 4B-14.	Staten Island Expressway (I-278) Westbound—Verrazzano-Narrows Bridge to Hylan Boulevard – MD (1:00 p.m. to 2:00 p.m.) .....	4B-45
Table 4B-15.	Staten Island Expressway (I-278) Westbound—Verrazzano-Narrows Bridge to Hylan Boulevard – PM (4:00p.m. to 5:00p.m.) .....	4B-46
Table 4B-16.	Existing Conditions: I-78 and Route 139 .....	4B-50
Table 4B-17.	Holland Tunnel Eastbound Traffic Volumes during AM, MD and PM Peak Hours under Existing Conditions, No Action Alternative, and CBD Tolling Alternative .....	4B-50
Table 4B-18.	Existing Conditions: New Jersey Route 495 Approach to the Lincoln Tunnel.....	4B-53
Table 4B-19.	Lincoln Tunnel Traffic Volumes during AM, MD and PM Peak Hours under Existing Conditions, No Action Alternative, and CBD Tolling Alternative .....	4B-54
Table 4B-20.	Roadway Contribution by Time Period to George Washington Bridge Traffic .....	4B-57
Table 4B-21.	Projected Increase in Traffic, compared to the No Action Alternative, along Trans-Manhattan and Cross Bronx Expressway Corridor .....	4B-58
Table 4B-22.	Estimated Increase of Traffic on the Lower FDR Drive* .....	4B-61
Table 4B-23.	Highway Capacity Software Performance Measures (AM).....	4B-71
Table 4B-24.	Highway Capacity Software Performance Measures (MD) .....	4B-72
Table 4B-25.	Highway Capacity Software Performance Measures (PM).....	4B-74
Table 4B-26.	Highway Capacity Software Performance Measures (Late Night) .....	4B-75
Table 4B-27.	Potential Adverse Traffic Effects on Highway Segments – SEQRA .....	4B-79
Table 4B-28.	Peak Hours by Study Area .....	4B-84
Table 4B-29.	Level of Service Average Control Delay Criteria .....	4B-86
Table 4B-30.	Potential Traffic Effects at Intersections With and Without Signal-Timing Improvements .....	4B-95
Table 4B-31.	Summary of Local Intersection Performance With Improvements.....	4B-102
Table 4B-32.	Summary of Effects of the CBD Tolling Alternative on Highways and Local Intersections.....	4B-111
<b>[Table 4B-33.]</b>	<b>Summary of the CBD Tolling Alternative Implementation Approach for Mitigation and Enhancement Measures for Highways and Local Intersections].....</b>	<b>4B-112</b>
Table 4C-1.	Busiest Subway Stations (Annual Total Ridership, 2019) .....	4C-2

Table 4C-2.	Busiest Subway Lines at the Entrance to the Manhattan CBD (2019, AM Peak Period) .....	4C-2
Table 4C-3.	Transit Ridership to and from the Manhattan CBD by Service Provider (AM Peak Period) (2019).....	4C-16
Table 4C-4.	Daily Person-Trips by Mode to and from the Manhattan CBD on an Average Weekday (2019) .....	4C-17
Table 4C-5.	AM Peak-Period Person-Trips to and from the Manhattan CBD by Mode on an Average Weekday (2019) .....	4C-18
Table 4C-6.	Transit Ridership: No Action Alternative and CBD Tolling Alternative (2023 AM Peak Period).....	4C-23
Table 4C-7.	Percentage Change in Transit Ridership: No Action Alternative and CBD Tolling Alternative (2023 AM Peak Period).....	4C-24
Table 4C-8.	Transit Ridership: No Action Alternative and CBD Tolling Alternative (2045 AM Peak Period).....	4C-25
Table 4C-9.	Transit Lines Triggering Detailed Line-Haul Analysis and Average Incremental Ridership Increase Across Tolling Scenarios (AM Peak Hour) .....	4C-27
Table 4C-10.	Transit Stations Triggering Detailed Analysis and Average Incremental Ridership Increase Across Tolling Scenarios (AM Peak Hour).....	4C-27
Table 4C-11.	Transit Stations Triggering Detailed Analysis and Average Incremental Ridership Increase Across Tolling Scenarios (PM Peak Hour).....	4C-28
Table 4C-12.	Projected Transit Ridership by Route at the Boundary between 60th Street and the Manhattan CBD (2023 AM Peak Period, Inbound).....	4C-30
Table 4C-13.	Projected New Passenger-Trips at Maximum Load Point for Routes Crossing into the Manhattan CBD at the 60th Street Boundary, (2023 AM Peak Period and Hour).....	4C-32
Table 4C-14.	Projected Incremental Ridership Increases at Maximum Load Point for Routes Crossing into the Manhattan CBD at the 60th Street Boundary (2023 AM Peak Hour).....	4C-33
Table 4C-15.	Projected Transit Ridership at the Boundary between Queens/Roosevelt Island and the Manhattan CBD (2023 AM Peak Period, Inbound).....	4C-34
Table 4C-16.	Projected New Passenger-Trips at Maximum Load Point for Routes Crossing into the Manhattan CBD from Queens/Roosevelt Island, (2023 AM Peak Hour) .....	4C-36
Table 4C-17.	Projected Incremental Ridership Increases at Maximum Load Point for Queens/Roosevelt Island (2023 AM Peak Hour) .....	4C-37
Table 4C-18.	Projected Transit Ridership by Routes at the Boundary between Brooklyn and the Manhattan CBD (2023 AM Peak Period, Inbound) .....	4C-38
Table 4C-19.	Projected New Passenger-Trips at Maximum Load Point for Routes Crossing into the Manhattan CBD from Brooklyn (2023 AM Peak Period and Hour).....	4C-39
Table 4C-20.	Projected Incremental Ridership Increases at Maximum Load Point for Brooklyn (2023 AM Peak Hour) .....	4C-40
Table 4C-21.	Projected Transit Ridership by Routes Crossing into the Manhattan CBD from Staten Island (2023 AM Peak Period, Inbound) .....	4C-40
Table 4C-22.	Projected New Passenger-Trips at Maximum Load Point for Staten Island Express Bus Routes (2023 AM Peak Period and Hour) .....	4C-41
Table 4C-23.	Projected Transit Ridership by Routes at the Boundary between New Jersey/West-of-Hudson and Manhattan CBD (2023 AM Peak Period, Inbound).....	4C-42



## Contents

Table 4C-24.	Projected New Passenger-Trips at Maximum Load Point for Routes Crossing into the Manhattan CBD from New Jersey/West of Hudson (2023 AM Peak Period and Peak Hour) .....	4C-43
Table 4C-25.	Projected Incremental Ridership Increases at Maximum Load Point for New Jersey/West of Hudson (2023 AM Peak Hour) .....	4C-43
Table 4C-26.	Projected Change in Bus Ridership Among Scenarios Compared to No Action Alternative (2023 AM Peak Period).....	4C-44
Table 4C-27.	Transit Stations with More than 200 Projected New Passengers in the AM Peak Hour (Tolling Scenario E, 2023).....	4C-47
Table 4C-28.	Transit Stations with More than 200 Projected New Passengers in the PM Peak Hour (Tolling Scenario E, 2023).....	4C-49
Table 4C-29.	Existing Conditions Level of Service for Analyzed Stations Elements (2019 AM Peak Hour) .....	4C-55
Table 4C-30.	Existing Conditions Level of Service for Analyzed Station Elements (2019 PM Peak Hour) .....	4C-55
Table 4C-31.	No Action Alternative Level of Service for Analyzed Station Elements (2023 AM Peak Hour) .....	4C-56
Table 4C-32.	No Action Alternative Level of Service for Analyzed Station Elements (2023 PM Peak Hour) .....	4C-56
Table 4C-33.	CBD Tolling Alternative Level of Service for Analyzed Station Elements (2023 AM Peak Hour) .....	4C-57
Table 4C-34.	CBD Tolling Alternative Level of Service for Analyzed Station Elements (2023 PM Peak Hour) .....	4C-58
Table 4C-35.	NYCT Station Elements Where Adverse Effects and Accompanying Project Improvements Have Been Identified (CBD Tolling Alternative, 2023 AM/PM Peak Hour).....	4C-59
Table 4C-36.	Level of Service on NJ TRANSIT Station Elements (Peak Hour) .....	4C-63
Table 4C-37.	Level of Service on PATH Hoboken Station Elements (AM and PM Peak Hours).....	4C-64
Table 4C-38.	Projected Net Passenger Increase at Hoboken Stair 01/02 (All Scenarios, AM Peak Hour).....	4C-64
Table 4C-39.	Summary of Effects of the CBD Tolling Alternative on Transit .....	4C-67
Table 4C-40.	<i>[Summary of the CBD Tolling Alternative Implementation Approach for Mitigation and Enhancement Measures for Transit]</i> .....	4C-69
Table 4D-1.	Summary of Effects of the CBD Tolling Alternative on Parking .....	4D-12
Table 4E-1.	Transit Station Pedestrian Trip Assessment.....	4E-5
Table 4E-2.	Existing (2021) Conditions Pedestrian Analysis Results (2019) .....	4E-6
Table 4E-3.	CBD Tolling Alternative 2023 Pedestrian Analysis Results .....	4E-8
Table 4E-4.	No Action Alternative, CBD Tolling Alternative, and CBD Tolling Alternative with Improvement Measures—Pedestrian Level of Service Analysis—Herald Square/Penn Station New York.....	4E-11
Table 4E-5.	Summary of Effects of the CBD Tolling Alternative on Pedestrians and Bicycles .....	4E-18
<b>[Table 4E-6.</b>	<b><i>Summary of the CBD Tolling Alternative Implementation Approach for Mitigation and Enhancement Measures for Pedestrians and Bicycles]</i></b> .....	<b>4E-19</b>
Table 5A-1.	Population Characteristics of the Regional Study Area .....	5A-11
Table 5A-2.	Total Daily Journeys to/from the Manhattan CBD by Tolling Scenario (2023, All Modes).....	5A-22
Table 5A-3.	Change in Total Daily Journeys to/from the Manhattan CBD Compared to No Action Alternative (2023, All Modes).....	5A-23

Table 5A-4.	Daily Non-Work-Related Journeys into the Manhattan CBD by County of Origin (2023, All Modes) .....	5A-24
Table 5A-5.	Change in Daily Non-Work-Related Journeys into the Manhattan CBD Compared to No Action Alternative (2023, All Modes) .....	5A-25
Table 5A-6.	Daily Work Journeys into Manhattan CBD by County of Origin (2023, All Modes) .....	5A-39
Table 5A-7.	Change in Daily Work Journeys into Manhattan CBD Compared to No Action Alternative (2023, All Modes) .....	5A-40
Table 5A-8.	Daily Work Journeys to Non-CBD Locations by County of Origin (2023, All Modes) ....	5A-41
Table 5A-9.	Change in Daily Work Journeys to Non-CBD Locations Compared to No Action Alternative (2023, All Modes) .....	5A-42
Table 5A-10.	Summary of Effects of the CBD Tolling Alternative on Population Characteristics and Community Cohesion .....	5A-47
Table 5B-1.	Summary of Effects of the CBD Tolling Alternative on Neighborhood Character .....	5B-17
Table 5C-1.	Metropolitan Planning Organizations in the Regional Study Area .....	5C-3
Table 5C-2.	Summary of Effects of the CBD Tolling Alternative Related to Public Policy .....	5C-8
Table 6-1.	Employed Labor Force and Jobs in the Regional Study Area .....	6-4
Table 6-2.	North American Industry Classification System Industry Categories of Manhattan CBD Workers .....	6-10
Table 6-3.	Standard Occupational Classification Categories of Manhattan CBD Workers .....	6-11
Table 6-4.	Small Businesses in the Manhattan CBD by Industry Category .....	6-13
Table 6-5.	Means of Transportation to Work for Regional Study Area's Workforce .....	6-14
Table 6-6.	Means of Transportation to Work for the Regional Study Area and New York City Workforce vs. Commuters to the Manhattan CBD .....	6-15
Table 6-7.	Means of Transportation to Work for Regional Study Area Employed Workforce by NAICS Industry Category .....	6-17
Table 6-8.	Manhattan Workers Who Commute by Auto by NAICS Industry Category .....	6-18
Table 6-9.	Standard Occupational Classification Categories for Manhattan Workers Who Commute by Auto .....	6-19
Table 6-10.	Industry Categories for Manhattan CBD Workers and Manhattan CBD Commuters .....	6-20
Table 6-11.	Industry Categories for Manhattan CBD Jobs in Census Tracts More than One-Half Mile from a Subway or Select Bus Service Bus Stop .....	6-21
Table 6-12.	Industry Categories for Jobs in 23 Manhattan CBD Census Tracts with the Largest Numbers of Car Commuters .....	6-25
Table 6-13.	Standard Occupational Classification Categories of Jobs in the 23 Manhattan CBD Census Tracts with the Largest Numbers of Car Commuters .....	6-26
Table 6-14.	Industry Categories of Jobs in the 11 Manhattan CBD Census Tracts with the Highest Percentage of Car Commuters .....	6-29
Table 6-15.	Standard Occupational Classification Categories of Jobs in the 11 Manhattan CBD Census Tracts with the Highest Proportions of Car Commuters .....	6-30
Table 6-16.	Regional Workforce Commuting To and Within the Manhattan CBD: No Action Alternative .....	6-42
Table 6-17.	Regional Workforce Commuting from Within the Manhattan CBD to Regional Destinations Outside the Manhattan CBD: No Action Alternative .....	6-43
Table 6-18.	Daily Regional Non-Work-Related Journeys To and Within the Manhattan CBD: No Action Alternative .....	6-44
Table 6-19.	Daily Non-Work-Related Journeys From the Manhattan CBD: No Action Alternative .....	6-45

## Contents

Table 6-20.	Daily Vehicle-Miles Traveled for Taxis/For-Hire Vehicles in the Regional Study Area: No Action Alternative .....	6-46
Table 6-21.	Daily Vehicle Trips Within and To the Manhattan CBD by Type: No Action Alternative .....	6-47
Table 6-22.	Percentage of Worker Journeys by Auto To, Within, and From the Manhattan CBD .....	6-51
Table 6-23.	Change in Numbers of Worker Journeys by Auto To, Within, and From the Manhattan CBD .....	6-51
Table 6-24.	Percentage of Worker Journeys by Non-Auto To and From the Manhattan CBD .....	6-53
Table 6-25.	Change in Number of Worker Journeys by Non-Auto To and From the Manhattan CBD .....	6-53
Table 6-26.	Daily Worker Journeys To and Within the Manhattan CBD (All Modes of Transportation).....	6-55
Table 6-27.	Daily Worker Journeys from the Manhattan CBD (All Modes of Transportation) .....	6-57
Table 6-28.	Net Change in Non-Work-Related Journeys To and Within the Manhattan CBD vs. No Action Alternative (All Modes of Transportation) .....	6-58
Table 6-29.	Change in Regional Non-Work-Related Journeys To and Within the Manhattan CBD: Tolling Scenario D versus No Action Alternative.....	6-59
Table 6-30.	Net Change in Taxi/For-Hire Vehicle Daily Vehicle-Miles Traveled vs. No Action Alternative .....	6-63
Table 6-31.	Truck Treatment by Tolling Scenario .....	6-67
Table 6-32.	Change in Daily Through Truck Trips via the Manhattan CBD, No Action Alternative vs. Tolling Scenarios.....	6-70
Table 6-33.	Parking Garages between 55th and 65th Streets .....	6-79
Table 6-34.	Change in Auto Journeys to the Manhattan CBD vs. No Action Alternative.....	6-80
Table 6-35.	Summary of Effects of the CBD Tolling Alternative on Economic Conditions.....	6-83
<b>[Table 6-36.</b>	<b><i>Summary of the CBD Tolling Alternative Implementation Approach for Enhancement Measures for Economic Conditions]</i></b> .....	<b>6-84</b>
Table 7-1.	Publicly Accessible Open Spaces in the Parks Study Area .....	7-3
Table 7-2.	Summary of Effects of the CBD Tolling Alternative on Parks and Recreational Resources <b><i>[and Implementation Approach for Mitigation and Enhancement Measures]</i></b> .....	7-33
Table 8-1.	Historic Properties and Summary of Changes .....	8-5
Table 8-2.	Summary of Effects of the CBD Tolling Alternative on Historic and Cultural Resources <b><i>[and Implementation Approach for Mitigation and Enhancement Measures]</i></b> .....	8-12
Table 9-1.	Summary of Effects of the CBD Tolling Alternative on Visual Resources .....	9-2
Table 10-1.	National Ambient Air Quality Standards .....	10-3
Table 10-2.	Current Air Quality Attainment Status.....	10-4
Table 10-3.	Comparison of County-Level Vehicle-Miles Traveled in the Regional Study Area, No Action Alternative and CBD Tolling Alternative (Tolling Scenario A, Years 2023 and 2045).....	10-12
Table 10-4.	MOVES2014b Input Parameters .....	10-14
Table 10-5.	MOVES2014b County Data Manager Inputs.....	10-14
Table 10-6.	Ambient Air Quality Monitored Data .....	10-18
Table 10-7.	Mesoscale Emission Burdens, CBD Tolling Alternative (Tolling Scenario A, tons/year) .....	10-22

Table 10-8.	Mesoscale Emission Burden Percentage Changes by County, CBD Tolling Alternative (Tolling Scenario A, Analysis Year 2023) .....	10-23
Table 10-9.	Mesoscale Emission Burden Percentage Changes by County, CBD Tolling Alternative (Tolling Scenario A, Analysis Year 2045) .....	10-24
Table 10-10.	Mobile Source Air Toxics Emission Burdens, CBD Tolling Alternative (Tolling Scenario A, tons/year) .....	10-36
Table 10-11.	Mobile Source Air Toxics Emission Burden Percentage Changes by County, CBD Tolling Alternative (Tolling Scenario A, Analysis Year 2023).....	10-37
Table 10-12.	Mobile Source Air Toxics Emission Burden Percentage Changes by County, CBD Tolling Alternative (Tolling Scenario A, Analysis Year 2045).....	10-38
Table 10-13.	CO and PM <sub>2.5</sub> /PM <sub>10</sub> Microscale Screening Results, CBD Tolling Alternative (Tolling Scenario C and Tolling Scenario D).....	10-44
<b>[Table 10-14.</b>	<b><i>Predicted Concentrations of Particulate Matter with the CBD Tolling Alternative (µg/m<sup>3</sup>)</i></b> .....	<b>10-48</b>
Table 10-15.	Summary of Effects of the CBD Tolling Alternative on Air Quality .....	10-52
<b>[Table 10-16.</b>	<b><i>Summary of the CBD Tolling Alternative Implementation Approach for Enhancement Measures for Air Quality</i></b> .....	<b>10-53</b>
Table 11-1.	Total Energy Consumption: No Action Alternative and CBD Tolling Alternative, Tolling Scenario A (2023 and 2045) .....	11-3
Table 11-2.	Summary of Effects of the CBD Tolling Alternative on Energy .....	11-4
Table 12-1.	Average Human Ability to Perceive Changes in Noise Levels .....	12-2
Table 12-2.	Range of Recognizable Noise Levels .....	12-3
Table 12-3.	New York City Environmental Quality Review External Noise Exposure Guidelines.....	12-6
Table 12-4.	Projected Noise-Level Changes (in dB(A)) for CBD Tolling Alternative (Worst-Case Tolling Scenarios D and C) .....	12-9
Table 12-5.	Summary of Effects of the CBD Tolling Alternative on Noise .....	12-12
Table 13-1.	Summary of Effects of the CBD Tolling Alternative on Natural Resources .....	13-14
<b>[Table 13-2.</b>	<b><i>Summary of the CBD Tolling Alternative Implementation Approach for Mitigation and Enhancement Measures for Natural Resources</i></b> .....	<b>13-14</b>
Table 14-1.	Summary of Effects of the CBD Tolling Alternative Related to Asbestos-Containing Materials, Lead-Based Paint, Hazardous Waste, and Contaminated Materials.....	14-5
<b>[Table 14-2.</b>	<b><i>Summary of the CBD Tolling Alternative Implementation Approach for Mitigation and Enhancement Measures for Asbestos-Containing Materials, Lead-Based Paint, Hazardous Waste, and Contaminated Materials</i></b> .....	<b>14-5</b>
Table 15-1.	Summary of Construction Effects of the CBD Tolling Alternative .....	15-6
<b>[Table 15-2.</b>	<b><i>Summary of the CBD Tolling Alternative Implementation Approach for Mitigation and Enhancement Measures for Construction Effects</i></b> .....	<b>15-6</b>
Table 16-1.	Summary of Effects of the CBD Tolling Alternative with Tolling Scenarios Detail .....	16-3
<b>[Table 16-2.</b>	<b><i>Summary of the CBD Tolling Alternative Implementation Approach for Mitigation and Enhancement Measures</i></b> .....	<b>16-15</b>
Table 16-[3].	CBD Tolling Alternative Pedestrian Analysis Results with East Side Access .....	16-35
Table 16-[4].	CBD Tolling Alternative with Improvement Measures with East Side Access—Pedestrian Level of Service Analysis—Herald Square/Penn Station New York.....	16-36
Table 17-1.	Population Characteristics of the Local Study Area .....	17-10
Table 17-2.	Population Characteristics of the Regional Study Area .....	17-14
Table 17-3.	Comparison of Origins for Commuters to the Manhattan CBD .....	17-16
Table 17-4.	Vehicle Access in the Regional Study Area .....	17-17



## Contents

Table 17-5.	Origins for All Commuters and Minority Commuters to the Manhattan CBD (All Modes).....	17-18
Table 17-6.	Travel Mode to Manhattan CBD for All Workers and Minority Workers.....	17-19
Table 17-7.	Estimated Origins of Minority Auto Commuters to the Manhattan CBD.....	17-19
Table 17-8.	Origins for All Commuters and Low-Income Commuters to the Manhattan CBD (All Modes) .....	17-21
Table 17-9.	Travel Modes for Low-Income Commuters to Manhattan Overall by Origin .....	17-22
Table 17-10.	Country of Birth for Taxi and FHV Drivers, 2018–2019 .....	17-24
Table 17-11.	Summary of Effects of CBD Tolling Alternative on Air Pollutants at the County Level.....	17-30
<b>[Table 17-12.]</b>	<b><i>Summary of Project Effects on Truck Traffic Proximity (Tolling Scenario E)</i></b> .....	<b>17-40</b>
<b>[Table 17-13.]</b>	<b><i>Daily Truck Volume in Tolling Scenario E Compared to No Action in Overburdened Communities</i></b> .....	<b>17-42</b>
Table 17- <del>[14.]</del>	Change in Taxi/For-Hire Vehicle Daily Vehicle-Miles Traveled in New York City vs. No Action Alternative, 2023 .....	17-53
Table 17- <del>[15.]</del>	Summary of Potential Adverse Effects on Environmental Justice Populations .....	17-57
<b>[Table 17-16.]</b>	<b><i>Regional and Place-Based Mitigation Measures</i></b> .....	<b>17-65</b>
Table 17- <del>[17.]</del>	Summary of Effects of the CBD Tolling Alternative Related to Environmental Justice .....	17-75
<b>[Table 17-18.]</b>	<b><i>Summary of the CBD Tolling Alternative Implementation Approach for Mitigation and Enhancement Measures Related to Environmental Justice</i></b> .....	<b>17-78</b>
Table 17- <del>[19.]</del>	Environmental Justice Webinars.....	17-82
Table 18-1.	Agencies Invited to Participate in the National Environmental Policy Act Process and Their Role or Expertise .....	18-1
Table 18-2.	Early Outreach Virtual Webinars.....	18-6
Table 18-3.	Repositories for Reviewing the Environmental Assessment .....	18-16
Table 18-4.	Public Hearing Dates and Times.....	18-21
<b>[Table 18-5.]</b>	<b><i>Repositories for Reviewing the Final Environmental Assessment and the Draft Decision Document</i></b> .....	<b>18-24</b>
Table 19-1.	Section 4(f) Historic Sites .....	19-6
Table 19-2.	Section 4(f) Parks.....	19-20

# Figures

Figure 1-1.	Most Congested Urban Areas (2021).....	1-1
Figure 1-2.	Manhattan CBD, National Highway System Arterials, and Routes into the Manhattan CBD .....	1-3
Figure 1-3.	Regional Study Area .....	1-5
Figure 1-4.	Vehicle Access (Manhattan CBD compared to United States) .....	1-9
Figure 1-5.	Travel Modes to Work (Manhattan CBD compared to United States).....	1-10
Figure 1-6.	Manhattan CBD Work Commuters: Origin .....	1-11
Figure 1-7.	People Entering Manhattan <i>[and Exiting]</i> CBD (by mode) .....	1-13
Figure 1-8.	Private Vehicles Entering and Exiting the Manhattan CBD on an Average Weekday .....	1-14
Figure 1-9.	Typically Congested Streets in Lower Manhattan During the Evening Rush (Summer 2022).....	1-16
Figure 2-1.	General Locations of New Tolls for Vehicles Accessing the Manhattan CBD.....	2-14
Figure 2-1.	General Locations of New Tolls for Vehicles Accessing the Manhattan CBD.....	2-14
Figure 2-2a.	Proposed Location of Tolling Infrastructure and Tolling System Equipment: Key Map.....	2-15
Figure 2-2b.	Proposed Locations of Tolling Infrastructure and Tolling System Equipment: West Side Highway/Route 9A and FDR Drive .....	2-16
Figure 2-2c.	Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Ed Koch Queensboro Bridge .....	2-17
Figure 2-2d.	Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Williamsburg Bridge .....	2-18
Figure 2-2e.	Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Manhattan Bridge.....	2-19
Figure 2-2f.	Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Brooklyn Bridge .....	2-20
Figure 2-2g.	Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Holland Tunnel .....	2-21
Figure 2-2h.	Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Battery Park Underpass and Hugh L. Carey Tunnel .....	2-22
Figure 2-2i.	Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Lincoln Tunnel .....	2-23
Figure 2-2j.	Proposed Locations of Tolling Infrastructure and Tolling System Equipment: 60th Street.....	2-24
Figure 2-3.	Typical Tolling Infrastructure and Tolling System Equipment .....	2-27
Figure 3-1.	Regional Study Area .....	3-4
Figure 3-2a.	Local Study Areas for Tolling Infrastructure and Tolling System Equipment .....	3-9
Figure 3-2b.	Local Study Area for Tolling Infrastructure and Tolling System Equipment: Ed Koch Queensboro Bridge and Queens-Midtown Tunnel.....	3-10
Figure 3-2c.	Local Study Area for Tolling Infrastructure and Tolling System Equipment: Williamsburg Bridge and Manhattan Bridge.....	3-11
Figure 3-2d.	Local Study Area for Tolling Infrastructure and Tolling System Equipment: Brooklyn Bridge and Holland Tunnel.....	3-12
Figure 3-2e.	Local Study Area for Tolling Infrastructure and Tolling System Equipment: Battery Park Underpass and Hugh L. Carey Tunnel.....	3-13

## Contents

Figure 3-2f.	Local Study Area for Tolling Infrastructure and Tolling System Equipment: Lincoln Tunnel .....	3-14
Figure 3-2g.	Local Study Area for Tolling Infrastructure and Tolling System Equipment: 60th Street.....	3-15
Figure 3-3a.	Key Map and Proposed Locations of Tolling Infrastructure and Tolling System Equipment Along FDR Drive and West Side Highway/Route 9A .....	3-16
Figure 3-3b.	Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Ed Koch Queensboro Bridge .....	3-17
Figure 3-3c.	Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Queens-Midtown Tunnel .....	3-18
Figure 3-3d.	Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Williamsburg Bridge .....	3-19
Figure 3-3e.	Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Manhattan Bridge.....	3-20
Figure 3-3f.	Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Brooklyn Bridge .....	3-21
Figure 3-3g.	Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Holland Tunnel .....	3-22
Figure 3-3h.	Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Battery Park Underpass and Hugh L. Carey Tunnel .....	3-23
Figure 3-3i.	Proposed Locations of Tolling Infrastructure and Tolling System Equipment: Lincoln Tunnel .....	3-24
Figure 3-3j.	Proposed Locations of Tolling Infrastructure and Tolling System Equipment: 60th Street.....	3-25
Figure 4-1.	Existing Vehicular Crossings to Manhattan.....	4-2
Figure 4-2.	Vehicular Entry and Exit Points for the Manhattan CBD .....	4-3
Figure 4-3.	Transit Routes to/from the Manhattan Central Business District (2019) .....	4-7
Figure 4A-1.	The Best Practice Model 28-County Region .....	4A-2
Figure 4A-2.	Reporting Locations in New York City for Additional Vehicle-Miles Traveled.....	4A-7
<b>[Figure 4A-3.</b>	<b><i>Representative Commuting Costs in the Regional Study Area</i>.....</b>	<b>4A-28</b>
Figure 4A-4.	Change in Transit Crossings into the Manhattan CBD .....	4A-37
Figure 4A-5.	Changes in Daily Taxi/FHV VMT in the Manhattan CBD, CBD Tolling Alternative Tolling Scenarios Compared to the No Action Alternative .....	4A-45
Figure 4B-1.	Analytical Approach Diagram .....	4B-2
Figure 4B-2.	Highways Leading to the Manhattan CBD .....	4B-13
Figure 4B-3.	Highways Leading to the Queens-Midtown Tunnel .....	4B-25
Figure 4B-4.	Highways Leading to the Hugh L. Carey Tunnel.....	4B-32
Figure 4B-5.	Highways Leading to/from the Verrazzano-Narrows Bridge .....	4B-41
Figure 4B-6.	Highways Leading to the Holland Tunnel.....	4B-49
Figure 4B-7.	Highways Leading to the Lincoln Tunnel.....	4B-52
Figure 4B-8.	Highways Leading to the Trans-Manhattan/Cross Bronx Expressway .....	4B-56
Figure 4B-9.	Highways Leading to the Bayonne Bridge.....	4B-64
Figure 4B-10.	Highways Leading to the Eastern Spur of I-95 .....	4B-66
Figure 4B-11.	Highways Leading to the Robert F. Kennedy Bridge .....	4B-69
Figure 4B-12.	Effects of CBD Tolling Alternative on Central Park Traffic .....	4B-81
Figure 4B-13.	Local Intersections and Data Collection Zones .....	4B-83
Figure 4B-14.	Potential Adverse Traffic Effects at Local Intersections AM Period .....	4B-104
Figure 4B-15.	Potential Adverse Traffic Effects at Local Intersections MD Period .....	4B-105

Figure 4B-16.	Potential Adverse Traffic Effects at Local Intersections PM Period .....	4B-106
Figure 4B-17.	Potential Adverse Traffic Effects at Local Intersections Late Night (LN) Period.....	4B-107
Figure 4C-1.	New York City Transit System Highlights .....	4C-3
Figure 4C-2.	Transit Services in the 28-County Regional Study Area .....	4C-8
Figure 4C-3.	Transit Routes to/from the Manhattan CBD (2019) .....	4C-11
Figure 4C-4.	Inbound AM Peak-Period Trips by Sector .....	4C-19
Figure 4C-5.	Transit Modes into the Manhattan CBD by Volume at the Cordon Crossing (AM Peak Period).....	4C-20
Figure 4C-6.	Projected Change in Transit Crossings Entering the Manhattan CBD by Sector (2023 AM Peak Period).....	4C-29
Figure 4C-7.	Transit Stations Identified for Detailed Station Analysis (2023, Tolling Scenario E – Representative Tolling Scenario).....	4C-51
Figure 4D-1.	<i>City Environmental Quality Review Technical Manual</i> Parking Zones .....	4D-3
Figure 4D-2.	General Location of Neighborhoods Near the Manhattan Central Business District ....	4D-7
Figure 4E-1.	Pedestrian Analysis Study Area .....	4E-4
Figure 4E-2.	Adverse Pedestrian Effects near Herald Square/Penn Station New York .....	4E-10
Figure 4E-3.	Bicycle Routes in the Manhattan CBD .....	4E-13
Figure 5A-1.	Regional Study Area .....	5A-4
Figure 5A-2.	Population and Density .....	5A-5
Figure 5A-3.	New York City Areas Within and Beyond One-Half Mile of Rail Stations, Subway Stations, or Express Bus and Select Bus Service Stops .....	5A-7
Figure 5A-4.	Work Trips Entering Manhattan CBD (by mode and origin).....	5A-13
Figure 5A-5.	Households in the Regional Study Area with No Vehicle by County .....	5A-14
Figure 5A-6.	Travel Modes to Work (by age of workers) .....	5A-15
Figure 5A-7.	Population and Commuters to Manhattan CBD from Areas More than One-Half Mile from Commuter Rail, Subway, or Express Bus Service .....	5A-16
Figure 5B-1.	View of the Manhattan CBD Looking North to Midtown Manhattan from One World Trade Center.....	5B-4
Figure 5B-2.	Morning Congestion and Traffic in Midtown Manhattan Looking South on Third Avenue (Summer 2022) .....	5B-6
Figure 5B-3.	60th Street Manhattan CBD Boundary Study Area (Manhattan from 55th Street to 65th Street) .....	5B-8
Figure 5C-1.	Metropolitan Planning Organizations in the Regional Study Area .....	5C-4
Figure 6-1.	Employment Density in the Regional Study Area .....	6-6
Figure 6-2.	Regional Study Area Employed Labor Force by North American Industry Classification System Industry Category .....	6-7
Figure 6-3.	Regional Study Area Jobs by North American Industry Classification System Industry Category .....	6-9
Figure 6-4.	Number of Manhattan Workers in Manhattan CBD Areas and Proximity to Subway Stops and Select Bus Service Routes .....	6-22
Figure 6-5.	Number of Commuters Who Drive to Locations in the Manhattan CBD .....	6-24
Figure 6-6.	Percentage of Commuters Who Drive to Locations in the Manhattan CBD .....	6-28
Figure 6-7.	Active Taxi and For-Hire Vehicles per Month (2015 through 2019) .....	6-34
Figure 6-8.	High-Volume For-Hire Vehicle and Yellow Cab Vehicle Miles Traveled (September 2019 through December 2021).....	6-37
Figure 6-9.	Land Use Near the 60th Street Manhattan CBD Boundary .....	6-76
Figure 6-10.	Off-Street Parking Facilities between 60th and 65th Streets North of the 60th Street Manhattan CBD Boundary.....	6-77



## Contents

Figure 6-11.	Off-Street Parking Facilities between 60th and 55th Streets South of the 60th Street Manhattan CBD Boundary.....	6-78
Figure 7-1a.	Parks and Recreational Resources: Local Study Area for CBD Tolling Program Infrastructure .....	7-8
Figure 7-1b.	Parks and Recreational Resources: Ed Koch Queensboro Bridge and Queens-Midtown Tunnel .....	7-9
Figure 7-1c.	Parks and Recreational Resources: Williamsburg Bridge and Manhattan Bridge.....	7-10
Figure 7-1d.	Parks and Recreational Resources: Brooklyn Bridge and Holland Tunnel.....	7-11
Figure 7-1e.	Parks and Recreational Resources: Battery Park Underpass and Hugh L. Carey Tunnel .....	7-12
Figure 7-1f.	Parks and Recreational Resources: Lincoln Tunnel .....	7-13
Figure 7-1g.	Parks and Recreational Resources: 60th Street.....	7-14
Figure 7-1a.	Parks and Recreational Resources: Local Study Area for CBD Tolling Program Infrastructure .....	7-8
Figure 7-2.	Central Park Map.....	7-16
Figure 7-3a.	Key to Central Park Photographs (Figures 7-3 [b] through 7-6) .....	7-20
Figure 7-3b.	Photographs: Central Park East Drive near Grand Army Plaza.....	7-21
Figure 7-3c.	Photographs: Central Park Center Drive near Sixth Avenue .....	7-22
Figure 7-3d.	Photographs: Central Park West Drive near Seventh Avenue.....	7-23
Figure 7-4[a].	Comparison of No Action Alternative versus CBD Tolling Alternative, Central Park Center Drive near Sixth Avenue .....	7-24
Figure 7-4[b].	Comparison of No Action Alternative versus CBD Tolling Alternative, Central Park East Drive near Grand Army Plaza .....	7-25
Figure 7-4[c].	Comparison of No Action Alternative versus CBD Tolling Alternative, Central Park West Drive near Seventh Avenue .....	7-26
Figure 7-5.	Comparison Views of No Action Alternative versus CBD Tolling Alternative, Fifth Avenue at East 60th Street.....	7-27
Figure 7-6.	Comparison Views of No Action Alternative versus CBD Tolling Alternative, Central Park West at West 60th Street.....	7-28
Figure 7-7.	Comparison Views of No Action Alternative [Versus] CBD Tolling Alternative: High Line at Tenth Avenue and West 30th Street.....	7-30
Figure 8-1.	Overview of Area of Potential Effects .....	8-4
Figure 10-1.	FHWA Projected National MSAT Emission Trends (2010 to 2050) using EPA's MOVES2014a Model for Vehicles Operating on Roadways .....	10-6
Figure 10-2.	U.S. Environmental Protection Agency Ambient Air Quality Monitoring Locations .....	10-19
Figure 10-3.	PM <sub>2.5</sub> Trends in the Study Area (2009 to 2019) .....	10-20
Figure 10-4.	Changes in Volatile Organic Compounds, Tolling Scenario A (Analysis Year 2023) .....	10-25
Figure 10-5.	Changes in Nitrogen Oxides, CBD Tolling Alternative (Tolling Scenario A, Analysis Year 2023).....	10-26
Figure 10-6.	Changes in Carbon Monoxide, CBD Tolling Alternative (Tolling Scenario A, Analysis Year 2023).....	10-27
Figure 10-7.	Changes in Particulate Matter 10 (PM <sub>10</sub> ), CBD Tolling Alternative (Tolling Scenario A, Analysis Year 2023) .....	10-28
Figure 10-8.	Changes in Particulate Matter 2.5 (PM <sub>2.5</sub> ), CBD Tolling Alternative (Tolling Scenario A, Analysis Year 2023) .....	10-29
Figure 10-9.	Changes in Volatile Organic Compounds, CBD Tolling Alternative (Tolling Scenario A, Analysis Year 2045) .....	10-30

Figure 10-10.	Changes in Nitrogen Oxides, CBD Tolling Alternative (Tolling Scenario A, Analysis Year 2045).....	10-31
Figure 10-11.	Changes in Carbon Monoxide, CBD Tolling Alternative (Tolling Scenario A, Analysis Year 2045).....	10-32
Figure 10-12.	Changes in Particulate Matter 10 (PM <sub>10</sub> ), CBD Tolling Alternative (Tolling Scenario A, Analysis Year 2045) .....	10-33
Figure 10-13.	Changes in Particulate Matter 2.5 (PM <sub>2.5</sub> ), CBD Tolling Alternative (Tolling Scenario A, Analysis Year 2045) .....	10-34
Figure 10-14.	Changes in Total Mobile Source Air Toxics: CBD Tolling Alternative (Tolling Scenario A, Analysis Year 2023) .....	10-39
Figure 10-15.	Changes in Total Mobile Source Air Toxics, CBD Tolling Alternative (Tolling Scenario A, Analysis Year 2045) .....	10-40
Figure 10-16.	Vehicle-Miles Traveled Increase (Tolling Scenario A) and Environmental Justice Census Tracts.....	10-41
Figure 12-1.	Traffic Noise Comparison in Passenger Car Equivalents (PCEs) .....	12-5
Figure 13-1.	National Wetlands Inventory and NYSDEC Mapped Wetlands and Existing Parkland.....	13-2
Figure 13-2.	Federal Emergency Management Agency 2015 Preliminary Flood Insurance Rate Map.....	13-4
Figure 13-3.	New York City Coastal Zone Boundary.....	13-5
Figure 17-1.	Environmental Justice Study Areas .....	17-7
Figure 17-2.	Environmental Justice Census Tracts in the Manhattan CBD.....	17-11
Figure 17-3.	Environmental Justice Census Tracts in the Local Study Area.....	17-12
Figure 17-4.	Environmental Justice Census Tracts in the Regional Study Area .....	17-13
Figure 17-5.	Origins of Minority Auto Commuters to the Manhattan CBD .....	17-20
Figure 17-6.	Local Traffic Analysis Intersections Relative to Environmental Justice Neighborhoods.....	17-27
Figure 17-7.	Predicted Changes in Vehicle-Miles Traveled in Tolling Scenario A Relative to Environmental Justice Neighborhoods .....	17-33
Figure 17-8.	Predicted Changes in Vehicle-Miles Traveled in Tolling Scenario D Relative to Environmental Justice Neighborhoods .....	17-34
Figure 17-9.	Predicted Changes in Vehicle-Miles Traveled in Tolling Scenario G Relative to Environmental Justice Neighborhoods .....	17-35
[Figure 17-10.	<i>Environmental Justice Designated Census Tracts with Pre-Existing Pollutant or Chronic Disease Burdens above the 80th or 66.66th National Percentile, Respectively]</i> .....	17-38
[Figure 17-11.	<i>Environmental Justice Census Tracts with Either Pre-Existing Pollutant Indicators At or Above the 80th Percentile or Pre-Existing Chronic-Disease Indicators At or Above the 66.66th Percentile That Could Experience Truck Traffic Increases or Decreases (Tolling Scenario E)]</i> .....	17-39
[Figure 17-12.	<i>Environmental Justice Census Tracts with High Pre-Existing Pollutant and Chronic Disease Burdens Where Truck Traffic Proximity Could Potentially Increase (Tolling Scenario E)]</i> .....	17-41
Figure 17[-13.]	Changes in Daily Taxi/FHV VMT in the Manhattan CBD, CBD Tolling Alternative Tolling Scenarios Compared to the No Action Alternative .....	17-55
Figure 17-[14].	Income Distribution for Households in the Manhattan CBD.....	17-71
Figure 19-1.	Key Map of Section 4(f) Historic Sites .....	19-11
Figure 19-2.	Section 4(f) Historic Sites – Ed Koch Queensboro Bridge and Manhattan Bridge .....	19-12

Contents

Figure 19-3. Section 4(f) Historic Sites – Brooklyn Bridge and Holland Tunnel ..... 19-13

Figure 19-4. Section 4(f) Historic Sites – Battery Park Underpass and Hugh L. Carey Tunnel ..... 19-14

Figure 19-5. Section 4(f) Historic Sites – Lincoln Tunnel..... 19-15

Figure 19-6. Section 4(f) Historic Sites – 60th Street and Central Park ..... 19-16

Figure 19-7. Section 4(f) Historic Sites – FDR Drive at East 25th Street and West Side  
Highway/Route 9A at Gansevoort Street..... 19-17

Figure 19-8. Section 4(f) Parks..... 19-19

Figure 19-9. General Locations of Proposed Tolling Equipment and New Signs in Central Park..... 19-28

# Appendices – Volume 1 and Volume 2

---

## VOLUME 1

### Appendix 2, Project Alternatives

- 2A, Previous Studies and Concepts Considered
- 2B, MTA Reform and Traffic Mobility Act
- 2C, Memorandum of Understanding between TBTA and NYCDOT
- 2D, CBD Tolling Program Signage
- 2E, Definition of Tolling Scenarios

### Appendix 4, Transportation

- 4A, Regional Transportation Effects and Modeling:
  - 4A.1, Implementation of Tolls in the Best Practice Model
  - 4A.2, Travel Forecast Scenario Summaries and Detailed Tables
  - 4A.3, Representative Commuting Costs by Auto and Transit
- 4B, Highways and Local Intersections:
  - 4B.1, Transportation and Traffic Methodology for NEPA Evaluation
  - 4B.2, Traffic Flow Maps
  - 4B.3, Traffic LOS: Existing and No Action Alternative
  - 4B.4, Traffic LOS: CBD Tolling Alternative
  - 4B.5, Traffic LOS: CBD Tolling Alternative with Mitigation
  - 4B.6, Highway Capacity Software Files
  - 4B.7, Average Travel Times To The Manhattan CBD
  - 4B.8, Overview of Highways throughout the Study Area
  - 4B.9, Traffic Data Collection Program

## VOLUME 2

- 4C, Supporting Documentation for Transit Analyses
  - 4C.1, Operator Service Maps
  - 4C.2, Details of Methodology and Assumptions
  - 4C.3, Existing Volumes Entering the Manhattan CBD By Sector (2019)
  - 4C.4, Screening Criteria
  - 4C.5, Detailed Analysis of Transit Operations
  - 4C.6, Adverse Effect Criteria
  - 4C.7, Level of Service Tables – New York City
  - 4C.8, Level of Service Tables – NJ TRANSIT and PATH Stations
  - 4C.9, Supplemental Analysis of Canal Street (A/C/E) Station
- 4D, Parking Data for Commuter Rail Stations
  - 4D.1, Parking Utilization at Commuter Rail Stations in the Regional Study Area
  - 4D.2, Parking Utilization at Commuter Rail Stations in the Regional Study Area including the East Side Access Project
- 4E, Supporting Documentation for Pedestrian Analyses
  - 4E.1, Methodologies and Adverse Effect Criteria
  - 4E.2, Pedestrian Analysis LOS Tables
  - 4E.3, Pedestrian Analysis Figures
  - 4E.4, Vehicular and Pedestrian Safety Evaluation
  - 4E.5, Pedestrian Analysis at Commuter Rail Stations in the Regional Study Area including the East Side Access Project



## Contents

**Appendix 5, Social Conditions**

- 5A, Community Impact Assessment Summary Matrix
- 5B, Supplemental Demographic Information for the Regional Study Area and Manhattan CBD
- 5C, New York State Smart Growth Public Infrastructure Policy Act Consistency Assessment

**Appendix 6, Economic Conditions**

- 6A, Information on Industry Sectors of Regional Labor Force and Employment
- 6B, Existing Truck Toll Rates

**Appendix 7, Parks and Recreational Resources:** Documentation Related to Section 6(f) of the Land and Water Conservation Fund Act**Appendix 8, Historic and Cultural Resources:** Section 106 Finding Documentation**Appendix 9, Visual Resources****Appendix 10, Air Quality**

- 10A, MOVES Modeling Files (Electronic)
- 10B, Project-Level Hot-Spot Screening Procedure
- 10C, Highway Link PM Hot-Spot Detailed Assessment (Methodology, Interagency Consultation, & Results)
- 10D, Changes in Annual Average Daily Traffic (AADT)

**Appendix 12, Noise****Appendix 13, Natural Resources**

- 13A, Natural Resources Correspondence
- 13B, Coastal Zone Consistency Assessments

**Appendix 17, Environmental Justice Communities**

- 17A, Methodology
- 17B, Environmental Justice Profile of Study Areas: Maps
- 17C, Environmental Justice Profile of Study Areas: Tables
- [17D, Technical Memorandum: Considerations for Environmental Justice Communities with Existing Pollution or Health Burdens]*
- [17E, Approach to Mitigating the Effect of CBD Tolls on Low-Income Frequent Drivers]*

**VOLUME 3*****[Appendix 18 - Agency Coordination and Public Participation]***

- 18A, Responses to Frequently Received Comments*
- 18B, Index of All Submissions*
- 18C, Comments and Responses (see Volume 4 on request)*
- 18D, Form Letter Submissions*

**Appendix 19, Section 4(f) Correspondence****VOLUME 4**

- [18C, Comments and Responses]*

# Abbreviations, Acronyms, and Initialisms

---

AADT .....	Annual Average Daily Traffic
AASHTO .....	Association of State Highway and Transportation Officials
ACM .....	Asbestos-Containing Materials
ACS .....	American Community Survey
ADA .....	Americans with Disabilities Act
APE .....	Area of Potential Effects
ATR .....	Automatic Traffic Recorder
AVE .....	Area of Visual Effect
BD .....	Central Business District
BPM .....	Best Practice Model
BQE .....	Brooklyn-Queens Expressway
Btu .....	British thermal units
CAA .....	Clean Air Act
CBD .....	Central Business District
CEQR .....	City Environmental Quality Review
CFR .....	Code of Federal Regulations
CH <sub>4</sub> .....	Methane
CHASP .....	Construction Health and Safety Plan
CO .....	Carbon Monoxide
CO <sub>2</sub> .....	Carbon Dioxide
CO <sub>2</sub> e .....	CO <sub>2</sub> Equivalents
CRIS .....	Cultural Resource Information System
CTPP .....	Census Transportation Planning Package
dB(A) .....	A-weighted decibels
EA .....	Environmental Assessment
ECL .....	Environmental Conservation Law
EFH .....	Essential Fish Habitat
EIS .....	Environmental Impact Statement
EJ .....	Environmental Justice
EPA .....	U.S. Environmental Protection Agency
ESA .....	Endangered Species Act
ESA .....	East Side Access
FCA .....	Fare Control Area
FDR Drive .....	Franklin D. Roosevelt Drive
FHV .....	For-Hire Vehicle
FHWA .....	Federal Highway Administration
fpm .....	feet per minute
GHG .....	Greenhouse Gas
GWBBS .....	George Washington Bridge Bus Station
GWP .....	Global Warming Potential
HCS .....	Highway Capacity Software
HEI .....	Health Effects Institute
HEET .....	High Entry/Exit Turnstyle
HOT .....	High-Occupancy Toll

Contents

HOV ..... High-Occupancy Vehicle

JFK Airport ..... John F. Kennedy Airport

LEP ..... Limited English Proficiency

LIRR..... Long Island Rail Road

LN..... Late Night

LOS..... Level of Service

LPC.....New York City Landmarks Preservation Commission

LWCFA ..... Land and Water Conservation Fund Act

MD..... Midday

Metro-North..... Metro-North Railroad

MOVES..... (USEPA) Motor Vehicle Emission Simulator

mph .....miles per hour

MPO..... Metropolitan Planning Organization

MSAT ..... Mobile Source Air Toxics

MTA ..... Metropolitan Transportation Authority

N<sub>2</sub>O ..... Nitrous Oxide

NAAQS ..... National Ambient Air Quality Standards

NAICS..... North American Industry Classification System

NEPA..... National Environmental Policy Act

NHL.....National Historic Landmark

NHPA ..... National Historic Preservation Act

NICE ..... Nassau Inter-County Express

NJ TRANSIT ..... New Jersey Transit Corporation

NJTPA..... North Jersey Transportation Planning Authority

NMFS ..... National Marine Fisheries Service

NO<sub>2</sub> ..... Nitrogen Dioxide

NPS ..... National Park Service

NR ..... National Register of Historic Places

NRHP .....National Register of Historic Places

NTP .....Non-Toll Pricing

NWI.....National Wetlands Inventory

NYC Parks ..... New York City Department of Parks and Recreation

NYCCAS..... New York City Community Air Survey

NYCDCP .....New York City Department of City Planning

NYCDOE..... New York City Department of Education

NYCDOT.....New York City Department of Transportation

NYCHD ..... New York City Historic District

NYCL .....New York City Landmark and New York City Scenic Landmark

NYCRR..... New York Codes, Rules, and Regulations

NYCT .....New York City Transit

NYMTC..... New York Metropolitan Transportation Council

NYPD..... New York City Police Department

NYSDEC..... New York State Department of Environmental Conservation

NYSDOP .....New York Statewide Digital Orthoimagery Program

NYSDOT ..... New York State Department of Transportation

O<sub>3</sub>..... Ozone

OSHA..... Occupational Safety and Health Administration

PABT ..... Port Authority Bus Terminal

PAH .....	Polycyclic Aromatic Hydrocarbon
PANYNJ .....	Port Authority of New York and New Jersey
PATH .....	Port Authority Trans-Hudson
Pb .....	Lead
pc/mi/ln .....	passenger cars per mile per lane (density)
PCB .....	Polychlorinated Biphenyl
PCE .....	Passenger Car Equivalent
PFAC .....	Program, Finance and Administration Committee
PM <sub>2.5</sub> and PM <sub>10</sub> .....	Particulate Matter (2.5 microns and 10 microns)
ppb .....	parts per billion
ppm .....	parts per million
RFK Bridge .....	Robert F. Kennedy Bridge
SBS .....	Select Bus Service
SEQRA .....	State Environmental Quality Review Act
SFP .....	Square Feet per Pedestrian
SHPO .....	State Historic Preservation Office
SIE .....	Staten Island Expressway
SIP .....	State Implementation Plan
SO <sub>2</sub> .....	Sulfur Dioxide
SOC .....	Standard Occupational Classification
TAZ .....	Traffic Analysis Zones
TBTA .....	Triborough Bridge and Tunnel Authority
TDM .....	Transportation Demand Management
TEM .....	The Environmental Manual
TIP .....	Transportation Improvement Program
Title VI .....	Title VI of the Civil Rights Act of 1964
TLC .....	New York City Taxi and Limousine Commission
UPARRA .....	Urban Park and Recreation Recovery Act
USACE .....	U.S. Army Corps of Engineers
USC .....	United States Code
USDOT .....	U.S. Department of Transportation
USEPA .....	U.S. Environmental Protection Agency
USFWS .....	U.S. Fish and Wildlife Service
v/c ratio .....	volume-to-capacity ratio
VCE .....	Vertical Circulation Element
VIA .....	Visual Impact Assessment
VMT .....	Vehicle-Miles Traveled
VPPP .....	Value Pricing Pilot Program
XBL .....	Exclusive Bus Lane
µg/m <sup>3</sup> .....	micrograms per cubic meter of air





# **CENTRAL BUSINESS DISTRICT (CBD) TOLLING PROGRAM FINAL ENVIRONMENTAL ASSESSMENT Executive Summary**

**April 2023**

**Federal Lead Agency**



**U.S. Department  
of Transportation**

**Federal Highway  
Administration**

**Project Sponsors**



**Department of  
Transportation**



*The translation of the Executive Summary from the official English version into any other language is for the sole purpose of facilitating participation during the public comment period by persons of Limited English Proficiency (LEP) or those who prefer to read the document in their native language.*



## TABLE OF CONTENTS

<b>WHAT IS THE CENTRAL BUSINESS DISTRICT TOLLING PROGRAM? .....</b>	<b>ES-2</b>
Where is the Project proposed? .....	ES-2
How do people and goods get to and move around in the Manhattan CBD today? .....	ES-2
Where will the benefits and effects of the Project occur? .....	ES-3
What is an Environmental Assessment (EA) and why is it needed for this Project? .....	ES-3
<b>WHY IS THE CBD TOLLING PROGRAM BEING CONSIDERED? .....</b>	<b>ES-5</b>
<b>PROJECT PURPOSE, NEED, AND OBJECTIVES .....</b>	<b>ES-6</b>
Why do we need to reduce traffic congestion? .....	ES-6
Why do we need money for transit investment? .....	ES-6
What are the Project objectives? .....	ES-7
<b>WHAT ARE THE PROJECT ALTERNATIVES? .....</b>	<b>ES-8</b>
No Action Alternative .....	ES-8
CBD Tolling Alternative (Action Alternative) .....	ES-11
Beneficial and Adverse Effects: What is important to know about the tolling scenarios in the CBD Tolling Alternative? .....	ES-11
Truck toll price. ....	ES-13
Time of day. ....	ES-13
<b>HOW DOES THE ACTION ALTERNATIVE MEET THE PROJECT OBJECTIVES? .....</b>	<b>ES-14</b>
What are the effects of the Project? .....	ES-14
What are the effects of the Project on environmental justice populations? .....	ES-15
Low-income drivers .....	ES-15
Taxis and FHV's .....	ES-18
<i>[Traffic changes in environmental justice communities]</i> .....	ES-18
<i>Air pollutants associated with traffic and truck traffic.</i> .....	ES-18
<i>Past land-use and transportation practices, trends and burdens.</i> .....	ES-19
<i>Summary of effects on truck traffic.</i> .....	ES-19
<i>Summary of effects on non-truck traffic.</i> .....	ES-19
<i>Mitigation for traffic diversions.</i> .....	ES-20
<i>Will the mitigation measures change the results of the EA?</i> .....	ES-24
How has the public been involved? .....	ES-25
Environmental Justice Technical Advisory Group. ....	ES-26
Environmental Justice Stakeholder Working Group. ....	ES-26
<b>WHAT ARE THE PROJECT'S EFFECTS TO SECTION 4(f) PROPERTIES? .....</b>	<b>ES-47</b>
 <b>Figures</b>	
Figure ES-1. The 28-County Region Study Area .....	ES-2
Figure ES-2. People Entering <i>[and Exiting]</i> Manhattan CBD (by mode) .....	ES-3
Figure ES-3. Most Congested Urban Areas (2021) .....	ES-5
Figure ES-4. Resource Areas and Effects Assessed in the EA .....	ES-15
<i>[Figure ES-5. Environmental Justice Census Tracts with High Pre-Existing Pollutant and Chronic Disease Burdens Where Truck Traffic Proximity Could Potentially Increase (Tolling Scenario E)]</i> .....	ES-21



Tables

Table ES-1. Results of Preliminary Alternatives Screening<sup>1</sup>..... ES-9

Table ES-2. Tolling Scenarios Evaluated for the CBD Tolling Alternative..... ES-12

Table ES-3. Comparison of Evaluation Results for the No Action and CBD Tolling Alternatives..... ES-14

**[Table ES-4. Regional and Place-Based Mitigation Measures]** ..... ES-22

Table ES-[5]. Summary of Benefits and Effects for the CBD Tolling Alternative with Comparison  
of Tolling Scenarios..... ES-27

**[Table ES-6. Summary of the CBD Tolling Alternative Implementation Approach for  
Mitigation and Enhancement Measures]** ..... ES-39

**ENDNOTES ..... ES-48**

The Executive Summary of the Environmental Assessment (EA) for the Central Business District (CBD) Tolling Program (the Project) presents a high-level summary of the Project, which includes:

- The Purpose, Need, and Objectives of the Project
- The Alternatives
- Project Effects
- Key Findings

Additional details related to the information in this Executive Summary may be found in the relevant chapters and appendices of the EA.

***[Based on feedback received during the public comment period, and during the additional Environmental Justice Technical Advisory Group discussions, as well as guidance from FHWA, the EA was revised, resulting in a Final EA for the CBD Tolling Program. Where the term “EA” is used, it refers to the Final EA as made available to the public in 2023, unless otherwise specified. Differences between the EA and Final EA are described in the “Foreword.”]***

## WHAT IS THE CENTRAL BUSINESS DISTRICT TOLLING PROGRAM?

The Triborough Bridge and Tunnel Authority (TBTA) – an affiliate of the Metropolitan Transportation Authority (MTA) – the New York State Department of Transportation (NYSDOT), and the New York City Department of Transportation (NYCDOT) (collectively, the Project Sponsors) are proposing the **Central Business District (CBD) Tolling Program** (the Project). The Project, a type of congestion pricing, would toll vehicles that enter or remain in the Manhattan CBD in order to reduce traffic congestion and generate revenue to fund \$15 billion to improve subway, bus, and commuter rail systems in MTA’s 2020–2024 Capital Plan or successor plans.

**Figure ES-1. The 28-County Region Study Area**



Source: ESRI, NYC Open Data, NYMTC 2020 TransCAD Highway Network

### Where is the Project proposed?

The Manhattan CBD consists of the geographic area of Manhattan south of and inclusive of 60th Street, not including the Franklin D. Roosevelt (FDR) Drive and the West Side Highway/Route 9A, the Battery Park Underpass and any surface roadway portion of the Hugh L. Carey Tunnel that connects to West Street (the West Side Highway/Route 9A).

The Manhattan CBD is the commercial center of a large metropolitan region of 28 counties in New York, New Jersey, and Connecticut that surrounds and includes New York City (Figure ES-1). Together these 28 counties are home to 22.2 million residents and more than 10.7 million jobs, making it the largest and most economically significant metropolitan region in the United States.

New York City alone contains roughly 4.6 million (43 percent) of the region’s jobs and 8.4 million (38 percent) of the region’s population.<sup>1</sup> The Manhattan CBD hosts 1.5 million jobs, 450 million square feet of office space, and more than 617,000 residents.<sup>2</sup> It is also a regional and national destination for commerce, entertainment, and tourism. Chapter 1, “Introduction” provides more information about the Project’s setting.

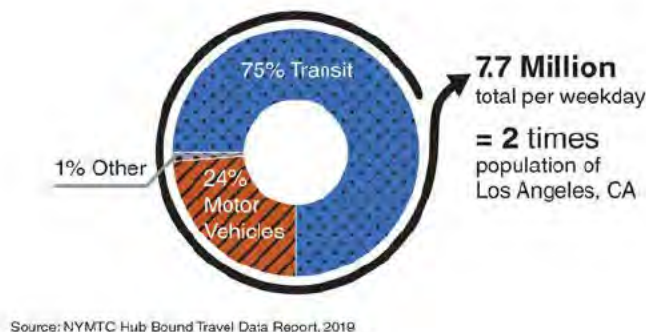
### How do people and goods get to and move around in the Manhattan CBD today?

Manhattan is connected to the rest of the region by twenty vehicular bridges and tunnels, the nation’s three largest commuter railroads, the largest subway system, and two of the five largest bus transit systems in the United States,<sup>3</sup> as well as public and private ferry service, and tram service. Much of the public transportation operates 24 hours per day/7 days per week/365 days per year. Chapter 4, “Transportation,” Subchapter 4B, “Transportation: Highways and Local Intersections,” and Subchapter 4C, “Transportation: Transit” provide detail on the region’s highway, roadway, and transit systems.



People traveling to the Manhattan CBD arrive by public transportation (rail, subway, bus, tram, ferry, and paratransit), walk or ride a bicycle, or travel by passenger car, taxi, for-hire vehicle (FHV), or truck. Public transportation is used by most people to enter the Manhattan CBD, both for work and for leisure. According to the New York Metropolitan Transportation Council (NYMTC) *Hub Bound Travel Data Report*, approximately 7,665,000 people entered and exited the Manhattan CBD on an average weekday in 2019, nearly twice the population of Los Angeles, California (**Figure ES-2**).<sup>4</sup> Seventy-five percent of these trips were made by transit, but an estimated 1,856,000 (24 percent) were made by car, taxi, van, or truck.<sup>5</sup>

**Figure ES-2. People Entering [and Exiting] Manhattan CBD (by mode)**



Source: NYMTC Hub Bound Travel Data Report, 2019

**[According to the 2012-2016 American Community Survey, commuters use transit to access the Manhattan CBD at even higher rates, with 85 percent using transit and 11 percent using motor vehicles.<sup>6</sup>]**

### Where will the benefits and effects of the Project occur?

The 28-county metropolitan region is the main catchment area for trips to and from the Manhattan CBD. The Project would affect travel patterns within the Manhattan CBD and in other parts of the region. Travel patterns change more intensely when approaching and within the Manhattan CBD. To assess beneficial and adverse effects of the Project, the EA uses a combination of the regional 28-county study area and several local study areas. The local study areas change according to the issue being explored for effects. For example, the local study area used to assess the visual effects associated with installation of tolling infrastructure and tolling system equipment is much smaller than the local study area to assess air quality changes. Additional discussion of these study areas is provided in **Chapter 3, “Environmental Analysis Framework,”** and in each chapter throughout the EA.

### What is an Environmental Assessment (EA) and why is it needed for this Project?

Before a Federal agency makes a decision, the National Environmental Policy Act (NEPA) requires the Federal agency to understand and disclose the environmental effects of the action. An EA (40 CFR §1501.5) is performed to ensure Federal agencies consider the environmental impacts of their actions in the decision-making process (40 CFR §1500.1(a)). For a proposed action that is not likely to have significant effects, or when the significance of the effect is unknown (40 CFR §1501.5[(a)]), the EA aids in determining the significance of the adverse effects. If the adverse effects are not significant or can be mitigated below significant levels, the Federal agency may issue a Finding of No Significant Impact (FONSI) (40 CFR §1501.6). If there are significant effects that cannot be mitigated, the Federal agency must develop an Environmental Impact Statement (EIS) leading to a Record of Decision (ROD).



**The Value Pricing Pilot Program (VPPP) and National Environmental Policy Act (NEPA)**

Established by the U.S. Congress as the Congestion Pricing Pilot Program in 1991, and renamed in 1998, the VPPP aims to demonstrate whether and to what extent congestion pricing strategies can reduce congestion, while also exploring the effects of these strategies on “driver behavior, traffic volumes, transit ridership, air quality and availability of funds for transportation programs.”

Enacted in 1970, NEPA requires that Federal agencies assess the environmental effects of their proposed actions before making decisions. Providing approval to the Project under the VPPP would be an action by FHWA and is, therefore, subject to NEPA.

**Sources:**

FHWA. “Value Pricing Pilot Program.”

[https://ops.fhwa.dot.gov/congestionpricing/value\\_pricing/index.htm](https://ops.fhwa.dot.gov/congestionpricing/value_pricing/index.htm)

United States Environmental Protection Agency. “What is the National Environmental Policy Act.”

<https://www.epa.gov/nepa/what-national-environmental-policy-act>

Some roadways within the Manhattan CBD are part of the National Highway System and some have been improved with funding from the Federal government. In order to toll these roadways, the Project Sponsors need approval from U.S. Department of Transportation’s Federal Highway Administration (FHWA), in this case through their Value Pricing Pilot Program (VPPP). When FHWA reviews a project sponsor’s application to the VPPP with the intention of taking an action, it must comply with NEPA.

FHWA, as the lead Federal agency for the NEPA process, determined that an EA is the appropriate class of action for this Project as the Project’s goals result primarily in operational changes, with very little physical impacts on the existing environment. The approach to reducing congestion in the Manhattan CBD lends itself to beneficial effects on air quality and quality of life.

FHWA recognizes that the Project could have effects on environmental justice populations. As a result, FHWA requested that the NEPA process include enhanced public outreach and coordination with Federal and state resource agencies.

## WHY IS THE CBD TOLLING PROGRAM BEING CONSIDERED?

Traffic congestion has been a problem in the Manhattan CBD for many years,<sup>7</sup> and has been one of New York City's most challenging policy problems for generations. As the regional population and commerce have grown, traffic has snarled with such regularity over the years that a new word was created to describe it: gridlock.<sup>8</sup>

NYCDOT, MTA, and other transportation agencies have implemented programs to reduce congestion, and improve transit, pedestrian, and bicycle accessibility in and to the Manhattan CBD. NYCDOT has repurposed curbside parking to establish bicycle lanes and increased pedestrian space with sidewalk and corner bump outs. It has also converted curbside lanes and general-purpose traffic lanes to dedicated bus lanes on certain Manhattan avenues and east-west, crosstown streets.

Additionally, MTA and other transit agencies offer reduced transit fares for the elderly, disabled, and school-aged children, and in early 2022, MTA implemented fare capping as part of its new fare system rollout (OMNY), which allows free, unlimited rides to customers the rest of the week once they have spent \$33 (the same as taking 12 trips). Many employers participate in a Federal program that allows employees to use pre-tax dollars to pay for transit, and many companies have adopted flexible work schedules, including options to work remotely.

**Figure ES-3. Most Congested Urban Areas (2021)**

United States	
1.	New York, NY
2.	Chicago, IL
3.	Philadelphia, PA
4.	Boston, MA
5.	Miami, FL

Source: INRIX, 2021

Despite these traffic-reduction initiatives, and despite the existence of the country's most extensive and robust public transit network, traffic congestion persists. In 2020 and 2021, New York City's traffic congestion ranked worst among the cities in the United States (**Figure ES-3**).<sup>9</sup>

State and City of New York officials and stakeholder and advocacy groups have conducted multiple studies over the past 45 years to determine the most effective way to address congestion in the Manhattan CBD. These studies overwhelmingly pointed to congestion pricing, or introduction of tolls based on traffic levels, as the most effective tool. **Chapter 2, "Project Alternatives,"** and **Appendix 2A, "Project Alternatives: Previous Studies and Concepts Considered,"** provide more information about other alternatives and these earlier studies.



## PROJECT PURPOSE, NEED, AND OBJECTIVES

The Project purpose is to reduce traffic congestion in the Manhattan CBD in a manner that will generate revenue for future transportation improvements, pursuant to acceptance into FHWA's VPPP.

### Why do we need to reduce traffic congestion?

Low travel speeds and unreliable travel times to, from, and within the Manhattan CBD increase commute and travel times for vehicles using the roadways, erode worker productivity, reduce bus and paratransit service quality, raise the cost of deliveries and the overall cost of doing business, and delay emergency vehicles. Thus, there is a need to reduce vehicle congestion in the Manhattan CBD to improve the reliability and efficiency of the transportation system.



### Why do we need money for transit investment?

***“The only way to end traffic jams in Manhattan and the approaches to it is by making public transportation better.”***  
Regional Plan Association, *Regional Plan News*, No. 82,  
February 1966

Transit is critical to New York City's overall economy, and to the region's residents, workers, and visitors, and continued investment in transit is necessary to ensure ongoing mobility and accessibility. ***[Indeed, MTA's transit system, and particularly the bus network, promotes equity by serving low-income and minority communities.]***

In 2019, MTA subways served 1.7 billion passengers and MTA buses carried 677.6 million passengers, providing access to employment, healthcare, education and the full range of services and entertainment options available throughout New York City. The 10 busiest subway stations in the MTA system are in the Manhattan CBD, and two of the 10 busiest MTA bus routes are in or serve the Manhattan CBD.<sup>10</sup> The Long Island Rail Road and Metro-North Railroad were the busiest commuter rail systems in the United States in 2019, and Penn Station New York and Grand Central Terminal, both within the Manhattan CBD, are the two busiest passenger rail stations in North America.<sup>11</sup>

#### Congestion by the Numbers

**Cost of Congestion:** 102 hours of lost time; nearly \$1,595 per year per driver in the New York City region.\*

**Travel Speeds:** Decreased [23%] in the Manhattan CBD, from 9.1 miles per hour (mph) to 7.1 mph between 2010 and 2019.\*\*

**FHV Registrations:** Tripled in New York City, from fewer than 40,000 to more than 120,000 between 2010 and 2019. Due to the effects of the COVID-19 pandemic and the city's continued cap on FHV registrations, the number of FHVs making trips fell to 70,000 by April 2022.†

**Local Bus Speeds:** Declined 28% in the Manhattan CBD since 2010. The average speed of Select Bus Service (New York City Transit's bus rapid transit service) routes in Manhattan are 19% slower than Select Bus Service routes in other boroughs.††

#### Sources:

\* INRIX 2021 Global Traffic Scorecard. <https://inrix.com/scorecard-city/?city=New%20York%20City%20NY&index=5>

\*\* NYCDOT. August 2019. New York City Mobility Report. <https://www1.nyc.gov/html/dot/downloads/pdf/mobility-report-print-2019.pdf>

† New York City Taxi and Limousine Commission and NYCDOT. June 2019. *Improving Efficiency and Managing Growth in New York's For-Hire Vehicle Sector*, NYC TLC FHV trip data.

†† NYCDOT. August 2019. New York City Mobility Report. <https://www1.nyc.gov/html/dot/downloads/pdf/mobility-report-print-2019.pdf>. New York City Transit analysis.

MTA employs approximately 70,000 people, making it one of the largest individual employers in New York State (and larger than many small cities). Through its capital spending, MTA annually injects billions of dollars into the local economy, both through major infrastructure projects and day-to-day operations and maintenance programs, indirectly supporting thousands of additional jobs far beyond its direct employment.<sup>12</sup>

Beginning in 2017, MTA's operating agencies engaged in projects to address some root causes of declining service that had begun in 2010 and implemented improvements to commuter rail and subway infrastructure. As documented in MTA's 2020–2024 Capital Program, these projects resulted in substantial reductions in delay and improvements in on-time performance.<sup>13</sup>

Elements of MTA's commuter rail and subway system are more than 100 years old, and essential capital needs remain to ensure a state of good repair and to bring MTA's transit and rail assets into the 21st Century. The 2020–2024 Capital Program is intended to “build on these achievements, ensuring that the improvements put in place will be sustainable for years to come.”<sup>14</sup> The program identifies \$52.0 billion of investments<sup>15</sup> in the region's subways, buses, and commuter railroads. The following are key tenets of the 2020–2024 Capital Program.

- Investing to improve reliability
- Committing to environmental sustainability
- Building an accessible transit system for all New Yorkers
- Easing congestion and creating growth
- Improving safety and customer service through technology<sup>16</sup>

### **What are the Project objectives?**

FHWA and the Project Sponsors have established the following objectives to further refine the Project purpose and address the needs described above.

- Reduce daily vehicle-miles traveled (VMT) within the Manhattan CBD by at least 5 percent
- Reduce the number of vehicles entering the Manhattan CBD daily by at least 10 percent
- Create a funding source for capital improvements and generate sufficient annual net revenues to fund \$15 billion for capital projects for the MTA Capital Program
- Establish a tolling program consistent with the purposes underlying the New York State legislation entitled the MTA Reform and Traffic Mobility Act<sup>17</sup>



## WHAT ARE THE PROJECT ALTERNATIVES?

FHWA and the Project Sponsors screened a number of preliminary alternatives against the Project purpose, need, and three of the four objectives (**Table ES-1**). **Chapter 2, “Project Alternatives,”** provides this analysis in further detail. The CBD Tolling Alternative is the alternative that meets the purpose, need and three objectives of the Project. Thus, for the purposes of this EA, there are two alternatives:

- **No Action Alternative**, which would not implement a vehicular tolling program in the Manhattan CBD
- **CBD Tolling Alternative (Action Alternative)**, which would implement a vehicular tolling program in the Manhattan CBD

Although the No Action Alternative does not meet the Project purpose and objectives, NEPA regulations require that it be evaluated and serve as the baseline condition against which the potential effects of the CBD Tolling Alternative are evaluated.

### No Action Alternative

The No Action Alternative assumes the following existing policies and programs would continue and a number of planned initiatives would be implemented, including:

- A cap on the number of FHV licenses in New York City would remain.
- The two-way, protected bicycle lanes on the Brooklyn Bridge, implemented by NYCDOT in fall 2021, would remain.<sup>18</sup>
- NYCDOT would continue the current configuration of two lanes in each direction between Atlantic Avenue and the Brooklyn Bridge on the Brooklyn-Queens Expressway; it would initiate repairs to the bridges and structures between Atlantic Avenue and Sands Street.<sup>19</sup>
- NYCDOT would convert a traffic lane to a pedestrian walkway on the Ed Koch Queensboro Bridge lower level, and the existing shared-use path on the north side of the lower level would be used only for bicycles.
- TBTA and the Port Authority of New York and New Jersey (PANYNJ) would continue tolling at their bridges and tunnels, while the East River Bridges and Harlem River Bridges would remain untolled. **Chapter 1, “Introduction,”** provides more information on **[existing]** tolls.
- MTA would continue to implement transit and rail improvement projects in its 2020–2024 Capital Program, based on the funding available. **Appendix 4A.1, Table 4A.1-3**, provides information on recent transit and rail improvement projects included in the EA analysis.
- NYCDOT and other New York City agencies would continue programs established in response to the COVID-19 pandemic, including the closure of certain sections of streets to vehicular traffic (“Open Streets”) and the use of curbside parking lanes for outdoor dining (“Open Restaurants”).
- NYCDOT would continue to develop bicycle and bus infrastructure including new bicycle and bus lanes.<sup>20</sup> **Chapter 4E, “Transportation: Pedestrians and Bicycles,”** provides further information on recently implemented and planned bicycle improvements.

**Table ES-1. Results of Preliminary Alternatives Screening<sup>1</sup>**

ALTERNATIVE	PURPOSE AND NEED: Reduce traffic congestion in the Manhattan CBD in a manner that will generate revenue for future transportation improvements	OBJECTIVE 1: Reduce daily vehicle-miles traveled (VMT) within the Manhattan CBD Criterion: Reduce by 5% (relative to No Action)	OBJECTIVE 2: Reduce the number of vehicles entering the Manhattan CBD daily Criterion: Reduce by 10% (relative to No Action)	OBJECTIVE 3: Create a funding source for capital improvements and generate sufficient annual net revenues to fund \$15 billion for capital projects for MTA's Capital Program
<b>NA-1:</b> No Action	Does not meet	Does not meet	Does not meet	Does not meet
<b>NTP-1:</b> Parking pricing strategies	Does not meet	Does not meet (see note 2)	Does not meet	Does not meet (see note 2)
<b>T-1:</b> Pricing on full roadways: Raise tolls or implement variable tolls on existing toll facilities	Does not meet	Does not meet (see note 3)	Does not meet (see note 3)	Does not meet
<b>T-2:</b> Pricing on full roadways: Toll East and Harlem River bridges	Does not meet (see note 4)	Meets	Meets	Does not meet (see note 4)
<b>T-3:</b> High-occupancy toll (HOT) lanes	Does not meet (see note 5)	Does not meet	Does not meet	Does not meet (see note 5)
<b>T-4:</b> Zone-based pricing: CBD Tolling Program	Meets	Meets	Meets	Meets
<b>O-1:</b> Parking pricing: Reduce government-issued parking permits	Does not meet	<i>[Does not meet (see note 6)]</i>	<i>[Does not meet (see note 6)]</i>	Does not meet
<b>O-2:</b> Provide additional taxi stands to reduce cruising	Does not meet	Does not meet (see note [7])	Does not meet	Does not meet
<b>O-3:</b> Create incentives for teleworking	Does not meet	Does not meet	Does not meet (see note [8])	Does not meet
<b>O-4:</b> Ration license plates	Does not meet	Meets	Meets	Does not meet
<b>O-5:</b> Mandatory carpooling	Does not meet	Meets	Meets	Does not meet
<b>O-6:</b> Truck time-of-day delivery restrictions	Does not meet	Does not meet (see note [9])	Does not meet (see note [9])	Does not meet

**Notes for Table ES-1**

- <sup>1</sup> Screening was based on a variety of prior studies and documents, including the following: New York City Traffic Congestion Mitigation Commission, “Congestion Mitigation Strategies: Alternatives to the City’s Plan” (December 10, 2007); and “Report to the Traffic Congestion Mitigation Commission & Recommended Implementation Plan” (January 31, 2008), and its appendices, including Cambridge Systematics, Inc., “Technical Memorandum: Telecommuting Incentives,” prepared for New York City Economic Development Corporation and New York City Department of Transportation (December 10, 2007); Cambridge Systematics, Inc., “Technical Memorandum: Night Delivery Incentives,” prepared for New York City Economic Development Corporation and New York City Department of Transportation (December 10, 2007); Cambridge Systematics, Inc., “Technical Memorandum: Congestion Reduction Policies Involving Taxis,” prepared for New York City Economic Development Corporation and New York City Department of Transportation (December 10, 2007); Cambridge Systematics, Inc., “Technical Memorandum: Increase Cost of Parking in the Manhattan Central Business District (CBD),” prepared for New York City Economic Development Corporation and New York City Department of Transportation (December 10, 2007).
- <sup>2</sup> For NTP-1: VMT reduction was estimated at substantially less than 1 percent. Further, there is no law or agreement in place between the City of New York and MTA that would direct the revenue generated from this alternative to MTA to support the Capital Program.
- <sup>3</sup> For T-1: This alternative would generate revenue, but the annual net revenues would not be sufficient to fund \$15 billion for capital projects for MTA’s Capital Program. The revenue as well as reduction in VMT and number of vehicles with this alternative depends on how high the toll is raised and whether tolls are increased only on Triborough Bridge and Tunnel Authority (TBTA) facilities or both TBTA and Port Authority of New York and New Jersey facilities. However, with some crossings remaining untolled, traffic would divert to untolled facilities, thereby reducing the revenue and not reducing traffic. Further, this alternative would not target congestion in the Manhattan CBD, given that a number of free entry points to the Manhattan CBD would remain available.
- <sup>4</sup> For T-2: Earlier studies showed this alternative would reduce congestion and could raise toll revenues equivalent to project objectives. However, there is no law or agreement in place between the City of New York and MTA that would direct the revenue to MTA to support the Capital Program. ***[In addition, the 2008 New York City Traffic Congestion Mitigation Commission Study identified a number of disadvantages to this alternative, including that this alternative would not address trips that start and end within Manhattan, such as trips beginning or ending on the Upper East Side and Upper West Side; and that this alternative would adversely affect local trips between the South Bronx and Harlem/Washington Heights, which could result in a local adverse economic impact in two environmental justice communities.]***
- <sup>5</sup> For T-3: HOT Lanes can be effective revenue generators, but their ability to reduce congestion and raise enough revenue to meet the target is limited due to the availability of free lanes on the same highway.
- <sup>[6]</sup> ***[For O-1: Earlier studies concluded that reducing parking placards issued to government employees would reduce VMT south of 86th Street by 0.1 to 0.3 percent, depending on the size of the reduction (reductions evaluated ranged from 3,000 to 10,000 placards). With this level of VMT reductions, this alternative also would not reduce the number of vehicles entering the Manhattan CBD enough to meet the Project objective.]***
- <sup>[7]</sup> For O-2: Provision of additional taxi stands would have no effect on the number of taxis entering the Manhattan CBD and would not necessarily reduce VMT since taxis would need to travel back to a taxi stand after discharging customers. Further, this alternative would not broadly address VMT for all vehicles, nor would it reduce the number of vehicles entering the Manhattan CBD.
- <sup>[8]</sup> For O-3: Earlier studies concluded that this alternative would reduce New York City commute trips by less than two percent. Recent experience with the COVID-19 pandemic has supported that conclusion. As the region returns to normal business activities, following large-scale, full-time teleworking, many office workers are continuing to telework, but traffic levels are returning to close to pre-COVID-19 pandemic levels (for more information, see **Chapter 1, “Introduction,” Section 1.4.1**). With such minimal impact, even combining this alternative with others like NTP-1 or O-2 would not yield congestion reductions and new revenue to meet the project’s purpose, need and objectives.
- <sup>[9]</sup> For O-6: To be successful, truck time-of-day restrictions would require receivers to be open and willing to receive the vehicles in overnight hours. Further, depending upon how the restrictions are implemented, some large trucks might instead send multiple small trucks, thereby increasing vehicle numbers and VMT.



## CBD Tolling Alternative (Action Alternative)

The CBD Tolling Alternative would toll vehicles entering or remaining in the Manhattan CBD. Noncommercial passenger vehicles entering the CBD would be tolled once per day. Vehicles that remain in the Manhattan CBD are vehicles that are detected leaving, but not detected entering the same day. Given that they were detected leaving, they must have driven through the Manhattan CBD and, therefore, remained some portion of the day. Noncommercial passenger vehicles would be tolled no more than once a day. There would be exemptions for qualifying vehicles transporting a person with disabilities and qualifying authorized emergency vehicles.

Residents whose primary residence is inside the Manhattan CBD and whose New York State adjusted gross income is less than \$60,000 would be eligible for a New York State tax credit equal to the amount of Manhattan CBD tolls paid during the taxable year.

The toll amount would be variable, with higher tolls charged during peak periods when congestion is greater. Because the effects are closely related to the toll structure, the CBD Tolling Alternative evaluated a range of toll structures in defined tolling scenarios. In most of these tolling scenarios, the toll rates for different types of vehicles, like delivery trucks, are different than the toll rates for noncommercial passenger vehicles.

### ***Beneficial and Adverse Effects: What is important to know about the tolling scenarios in the CBD Tolling Alternative?***

A decision on the actual toll structure will occur after the EA is completed. A Traffic Mobility Review Board (TMRB) ***[has been established consistent with the MTA Reform and Traffic Mobility Act]*** to develop recommendations on toll rates, exemptions, crossing credits applied against the CBD toll for tolls paid on other toll tunnels or bridges, and/or discounts. For the EA, to explore the range of effects that could occur with the CBD Tolling Alternative, the Project Sponsors initially developed six tolling scenarios (A–F). Each scenario includes different combinations of crossing credits, potential discounts (in the form of caps), and exemptions (Table ES-2). After the early public outreach, and given concerns expressed regarding diversions of truck traffic, a seventh scenario (G) was added to avoid some of these traffic effects. Chapter 2, “Project Alternatives,” provides more detail on each scenario while Subchapter 4A, “Transportation: Regional Transportation Effects and Modeling” and Subchapter 4B, “Transportation: Highways and Local Intersections,” provides more information on traffic effects.

### ***How and When Would I be Tolled?***

Below are some examples of when and how the toll would be applied.

- A car drives into the Manhattan CBD on Monday morning and leaves Monday evening before midnight. It would be detected when it enters and when it leaves the Manhattan CBD. Because passenger vehicles would be charged only once daily, a single toll would be charged.
- A car drives into the Manhattan CBD on Monday, and parks until it leaves on Wednesday. It would be charged entering on Monday and for remaining when it drove through the Manhattan CBD on Wednesday to leave. It would not be charged when it was parked the full 24-hours on Tuesday.
- A car makes two round trips into the Manhattan CBD on the same day. It would be charged a single toll, because passenger vehicles would be charged only once daily.
- A car is parked all week within the Manhattan CBD and then leaves the Manhattan CBD for a day trip on Saturday, returning before midnight. The car would be detected leaving (remaining) and entering the Manhattan CBD on the same day. Because passenger vehicles would be charged only once daily, a single toll would be charged on Saturday.
- A car is parked all week within the Manhattan CBD and then leaves the Manhattan CBD on Friday and returns on Monday. The car would be detected leaving (remaining) on Friday and entering when it returns on Monday. It would receive a charge on Friday for remaining and on Monday for entering. It would not be charged any other days when it was parked the entire day in the Manhattan CBD, nor the days when it was away.



**Table ES-2. Tolling Scenarios Evaluated for the CBD Tolling Alternative**

PARAMETER <sup>1</sup>	SCENARIO A	SCENARIO B	SCENARIO C	SCENARIO D	SCENARIO E	SCENARIO F	SCENARIO G
	Base Plan	Base Plan with Caps and Exemptions	Low Crossing Credits for Vehicles Using Tunnels to Access the CBD, with Some Caps and Exemptions	High Crossing Credits for Vehicles Using Tunnels to Access the CBD	High Crossing Credits for Vehicles Using Tunnels to Access the CBD, with Some Caps and Exemptions	High Crossing Credits for Vehicles Using Manhattan Bridges and Tunnels to Access the CBD, with Some Caps and Exemptions	Base Plan with Same Tolls for All Vehicle Classes
<b>Time Periods<sup>2</sup></b>							
Peak: Weekdays	6 a.m. to 8 p.m.	6 a.m. to 8 p.m.	6 a.m. to 8 p.m.	6 a.m. to 8 p.m.	6 a.m. to 8 p.m.	6 a.m. to 10 a.m.; 4 p.m. to 8 p.m.	6 a.m. to 8 p.m.
Peak: Weekends	10 a.m. to 10 p.m.	10 a.m. to 10 p.m.	10 a.m. to 10 p.m.	10 a.m. to 10 p.m.	10 a.m. to 10 p.m.	10 a.m. to 10 p.m.	10 a.m. to 10 p.m.
Off Peak: Weekdays	8 p.m. to 10 p.m.	8 p.m. to 10 p.m.	8 p.m. to 10 p.m.	8 p.m. to 10 p.m.	8 p.m. to 10 p.m.	10 a.m. to 4 p.m.	8 p.m. to 10 p.m.
Overnight: Weekdays	10 p.m. to 6 a.m.	10 p.m. to 6 a.m.	10 p.m. to 6 a.m.	10 p.m. to 6 a.m.	10 p.m. to 6 a.m.	8 p.m. to 6 a.m.	10 p.m. to 6 a.m.
Overnight Weekends	10 p.m. to 10 a.m.	10 p.m. to 10 a.m.	10 p.m. to 10 a.m.	10 p.m. to 10 a.m.	10 p.m. to 10 a.m.	10 p.m. to 10 a.m.	10 p.m. to 10 a.m.
<b>Potential Crossing Credits</b>							
Credit Toward the CBD Toll for Tolls Paid at the Queens-Midtown, Hugh L. Carey, Lincoln, Holland Tunnels	No	No	Yes	Yes	Yes	Yes	No
Credit Toward the CBD Toll for Tolls Paid at the Robert F. Kennedy, Henry Hudson, George Washington Bridges	No	No	No	No	No	Yes	No
<b>Potential Exemptions and Limits (Caps) on Number of Tolls per Day</b>							
Cars, motorcycles, commercial vans	Once per day	Once per day	Once per day	Once per day	Once per day	Once per day	Once per day
Taxis	No cap	Once per day	Exempt	No cap	Exempt	Once per day	No cap
FHVs	No cap	Once per day	Three times per day	No cap	Three times per day	Once per day	No cap
Small and large trucks	No cap	Twice per day	No cap	No cap	No cap	Once per day	No cap
Buses	No cap	Exempt	No cap	No cap	Transit buses—Exempt No cap on others	Exempt	No cap
<b>Approximate Toll Rate Assumed<sup>3</sup></b>							
Peak	\$9	\$10	\$14	\$19	\$23	\$23	\$12
Off Peak	\$7	\$8	\$11	\$14	\$17	\$17	\$9
Overnight	\$5	\$5	\$7	\$10	\$12	\$12	\$7

<sup>1</sup> The parameters in this table were assumed for modeling purposes to evaluate the range of potential effects that would result from implementation of the CBD Tolling Alternative. Actual toll rates, potential credits, exemptions and/or discounts, and the time of day when toll rates would apply would be determined by the TBTA Board after recommendations are made by the Traffic Mobility Review Board. **Appendix 2E, “Project Alternatives: Definition of Tolling Scenarios,”** provides more detailed information on the rates, potential crossing credits, exemptions, and/or discounts assumed for each tolling scenario.

<sup>2</sup> Tolls would be higher during peak periods when traffic is greatest. These would be set forth by TBTA in the final toll schedule. All tolling scenarios include a higher toll on designated “Gridlock Alert” days, although the modeling conducted for the Project did not reflect this higher toll since it considers typical days rather than days with unusually high traffic levels.

<sup>3</sup> Toll rates are for autos, commercial vans, and motorcycles using E-ZPass and are rounded. For all tolling scenarios, different rates would apply for vehicles not using E-ZPass; for Tolling Scenarios A through F, different vehicle classes would pay different tolls (see **Appendix 2E, “Definition of Tolling Scenarios”**). The peak E-ZPass rate (rounded) range across tolling scenarios for small trucks would be \$12-\$65; for large trucks, the range would be \$12-\$82.

There are several components to the toll structure, but the most important factor in the magnitude and distribution of effects from the Project is the toll rate. Overall, the Project would result in a congestion benefit both regionally and within the Manhattan CBD. On a local level, depending on the toll structure, near and adjacent to the Manhattan CBD there would be increases or decreases in traffic volumes as vehicles divert to other routes to avoid the toll. **Table ES-5** provides additional information regarding these effects and proposed mitigation. The following trends are important to understand:

- All the tolling scenarios would reduce traffic entering the Manhattan CBD.
- All the tolling scenarios would have an overall net benefit in congestion reduction for the region.
- Adding discounts, crossing credits, and exemptions would require that the overall toll rates increase, leading to more congestion reduction.
- Higher toll rates would reduce traffic, and increase transit ridership entering the Manhattan CBD.
- Higher toll rates would increase traffic diversions as drivers avoid the toll. This would lead to less traffic in the Manhattan CBD, and changes in traffic patterns outside of the CBD, with both increases and decreases of traffic in localized locations elsewhere.
- Crossing credits, which would credit some of the amount drivers pay for TBTA or PANYNJ tolls against the CBD toll, would bring the total costs of different routes into the CBD closer to parity and therefore change the degree to which, and balance of where, traffic reductions occur.
  - ❖ Tolling scenarios with crossing credits would have less effect on reducing traffic entering the Manhattan CBD from Queens, and much less effect on reducing traffic entering from New Jersey than tolling scenarios without crossing credits. Tolling scenarios with crossing credits would lead to greater decreases in traffic entering from north of 60th Street and Brooklyn.
  - ❖ Crossing credits would encourage some drivers to shift from the currently-free East River Bridges to TBTA's tolled tunnels. As a result, traffic would increase at the Queens-Midtown Tunnel and the Hugh L. Carey Tunnel, resulting in more traffic on the Long Island Expressway and a shift of traffic along the Gowanus Expressway from the BQE to the Hugh Carey Tunnel, as well as increases in traffic on the local streets in Manhattan that feed traffic to and from these tunnels.

In addition to the toll rate and crossing credits, several other factors play a role in generating beneficial and adverse effects.

**Truck toll price.** Unlike cars, trucks cannot shift to a different mode (e.g., transit). For trucks traveling through the CBD en route to their final destination, their only alternative to paying the toll is to not make the trip or divert around the Manhattan CBD. Similar to the general traffic, increased tolls decrease truck traffic entering the Manhattan CBD. Truck diversion increases with increases in the toll (similar to general traffic). In particular, trucks would divert to routes on highways in Staten Island and in the South Bronx.

**Time of day.** Reducing the toll in the overnight period would reduce diversions to alternative routes, lessening effects outside the Manhattan CBD and encouraging delivery vehicles to shift to the less-congested overnight

#### Public Outreach Response

In response to concerns raised during the early Public Outreach related to increased truck traffic on the Cross Bronx Expressway and the fact that trucks do not have an alternate mode of travel to avoid the toll, Scenario G was added. This scenario charges the same toll rate for cars and trucks and significantly reduces truck diversions in the South Bronx and Staten Island. See **Chapter 4A, "Regional Transportation Effects and Modeling."**

period. Though not as substantial with this lower overnight charge, traffic reductions would still occur.

## HOW DOES THE ACTION ALTERNATIVE MEET THE PROJECT OBJECTIVES?

FHWA will consider the No Action and the CBD Tolling Alternative (Action Alternative) as a whole, while being mindful that the Action Alternative includes a range of potential tolling scenarios. **Table ES-3** summarizes how the No Action and the Action Alternative meet the Project purpose, needs, and objectives.

**Table ES-3. Comparison of Evaluation Results for the No Action and CBD Tolling Alternatives**

SCREENING CRITERION	NO ACTION ALTERNATIVE	CBD TOLLING (ACTION) ALTERNATIVE
<b>Purpose and Need:</b> Reduce traffic congestion in the Manhattan CBD in a manner that will generate revenue for future transportation improvements	DOES NOT MEET	MEETS
<b>Objective 1:</b> Reduce daily vehicle-miles traveled (VMT) within the Manhattan CBD Criterion: Reduce by 5% (relative to No Action)	DOES NOT MEET	MEETS
<i>Daily VMT reduction (2023)</i>	0%	7.1% - 9.2%
<b>Objective 2:</b> Reduce the number of vehicles entering the Manhattan CBD daily Criterion: Reduce by 10% (relative to No Action)	DOES NOT MEET	MEETS
<i>Daily vehicle reduction (2023)</i>	0%	15.4% - 19.9%
<b>Objective 3:</b> Create a funding source for capital improvements and generate sufficient annual net revenues to fund \$15 billion for capital projects for MTA's Capital Program	DOES NOT MEET	MEETS <sup>1</sup>
<i>Net revenue to support MTA's Capital Program<sup>2</sup></i>	\$0	\$1.02 billion - \$1.48 billion
<b>Objective 4:</b> Establish a tolling program consistent with the purposes underlying the New York State legislation entitled the "MTA Reform and Traffic Mobility Act"	DOES NOT MEET	MEETS

<sup>1</sup> Although Tolling Scenario B would not meet Objective 3 with the toll rates identified and assessed in this Environmental Assessment (EA), additional analysis was conducted to demonstrate that it would meet this objective with a higher toll rate; the resulting VMT reduction and revenue for that modified scenario would fall within the range of the other scenarios presented. **Chapter 16, "Summary of Effects,"** provides more information on the modified Tolling Scenario B.

<sup>2</sup> The net revenue needed to fund \$15 billion depends on a number of economic factors, including but not limited to interest rates and term. For the purposes of this EA, the modeling assumes the Project should provide at least \$1 billion annually in total net revenue, which would be invested or bonded to generate sufficient funds. The net revenue values provided in this table are rounded and based on Project modeling.

As described in the EA, the TBTA Board would adopt a final toll structure, including toll rates and any crossing credits, discounts, and/or exemptions, informed by recommendations made by the Traffic Mobility Review Board and following a public hearing in accordance with the State Administrative Procedure Act.

### What are the effects of the Project?

This EA analyzes 18 resource areas. **Figure ES-4** identifies those where there would be only beneficial or no adverse effects from the Project, and those areas that have identified potential adverse effects that will be mitigated. In the case of potential adverse effects, some of these adverse effects would only occur in certain tolling scenarios. **Table ES-[5]** provides more detail on which tolling scenarios would result in beneficial or adverse effects, to what degree, and what mitigation measures will be instituted. **Table ES-6** summarizes when and how these



**mitigation measures will be implemented by the Project Sponsors].** Each respective chapter provides additional description and discussion.

**Figure ES-4. Resource Areas and Effects Assessed in the EA**

Areas with Only Beneficial or No Adverse Effects	Areas with Potential Adverse Effects
Transportation: Regional Transportation Transportation: Parking Social Conditions: Population Social Conditions: Neighborhood Character Social Conditions: Public Policy Economic Conditions Energy Parks and Recreational Resources Historic and Cultural Resources Visual Resources Air Quality Energy Noise Natural Resources Hazardous Waste/Contaminated Materials Construction Effects	Transportation: Highways and Intersections Transportation: Transit Transportation: Pedestrians and Bicycles Environmental Justice

### What are the effects of the Project on environmental justice populations?

Some of the Project effects occur in certain locations, so attention was given to whether these effects occurred broadly across the region or population, or whether they affect communities or populations of those who are low-income or historically underrepresented (environmental justice communities or populations). The following paragraphs provide additional explanation about related beneficial or adverse effects.

Reduced traffic would benefit all drivers traveling to and near the Manhattan CBD, including environmental justice populations, by improving travel times, reducing vehicle operating costs, and improving safety. ***[Investments in transit would also benefit environmental justice populations who use MTA's subways and buses to access work, school, medical care, and more.]*** The Project would improve regional air quality, and most environmental justice populations who live in the Manhattan CBD would experience lower localized pollutant emissions due to reduced traffic. Additional benefits are described in **Chapter 17, "Environmental Justice."**

### Low-income drivers

The cost of the new CBD toll would not be predominantly borne by low-income drivers. However, for low-income drivers who have no ***[reasonable]*** alternative to reach the Manhattan CBD other than private vehicle, the effect of that cost would be more burdensome because the cost of the toll would consume a larger percentage of their available income. ***[As such, the EA as published in August 2022 found that a disproportionately high and adverse effect would potentially occur for low-income drivers to the Manhattan CBD who do not have a reasonable alternative transportation mode for reaching the Manhattan CBD. This is particularly relevant for low-income frequent drivers to the Manhattan CBD.<sup>21</sup> In addition to the mitigation previously offered, which will reduce barriers to benefiting from lower E-ZPass toll rates (compared to Tolls by Mail) and existing toll discounts available to certain***



***E-ZPass customers, as well as the new mitigation measure of a significantly reduced toll during the overnight period, TBTA also commits to a low-income discount plan for these drivers.***

***Specifically, TBTA will ensure that for the first five years of the Project, the final tolling structure includes a discounted toll rate for low-income frequent drivers who have either a Federal adjusted gross income reported on their income tax return for the prior calendar year in the amount of no more than \$50,000 or proof of enrollment in a qualifying government-provided income-based program (such as the Supplemental Nutrition Assistance Program (SNAP) or the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)).<sup>22</sup> As examples, a frequent driver could be someone commuting to work or someone who regularly visits a facility for medical care.***

***Through the use of their E-ZPass tag and an associated Low-Income Discount Plan on their E-ZPass account, qualifying drivers will benefit from a 25 percent discount on the full CBD E-ZPass toll rate for the applicable time of day after the first 10 trips in each calendar month. (This discount will not include the overnight period, which will already be deeply discounted.)***

***This new mitigation, combined with the other mitigation measures described in the EA, several of which eliminate barriers to becoming an E-ZPass customer,<sup>23</sup> will ensure that the Project does not result in a disproportionately high and adverse effect on low-income drivers to the Manhattan CBD.***

***The box below describes all the mitigation measures associated with low-income drivers. Additional information on each of these may be found in Tables ES-5 and ES-6 at the end of the Executive Summary.]***

**To [ensure that the Project does not result in a potential] disproportionately high and adverse effect on low-income drivers who [have no other reasonable alternative to driving], the Project Sponsors will institute the following mitigation and enhancement [measures].**

#### **MITIGATION**

The Project will include a tax credit for CBD tolls paid by residents of the Manhattan CBD whose New York adjusted gross income for the taxable year is less than \$60,000. TBTA will coordinate with the New York State Department of Taxation and Finance (NYS DTF) to ensure availability of documentation needed for drivers eligible for the NYS tax credit.\*

TBTA will post information related to the tax credit on the Project website, with a link to the appropriate location on the NYS DTF website to guide eligible drivers to information on claiming the credit.

TBTA will eliminate the \$10 E-ZPass tag deposit fee for customers without credit card backup.

TBTA will provide enhanced promotion of existing E-ZPass payment and plan options, including the ability for drivers to pay per trip (rather than a pre-load balance), refill their accounts with cash at participating retail locations, and discount plans already in place, about which they may not be aware.

TBTA will provide outreach and education on eligibility for existing discounted transit fare products and programs, including those for individuals 65 years of age and older, those with disabilities, and those with low incomes, about which many may not be aware.

The Project Sponsors commit to establishing an Environmental Justice Community Group that will meet on a [quarterly] basis, [with the first meeting prior to project implementation], to share updated data and analysis and listen to potential concerns.

**[TBTA will ensure the overnight toll rate is reduced to at or below 50 percent of the peak toll from at least 12:00 a.m. to 4:00 a.m. in the final CBD tolling structure, which will benefit low-income drivers traveling during this time.]**

**[TBTA commits that for the first five years of the Project, the final tolling structure will include a discounted toll rate for low-income frequent drivers who have either a Federal adjusted gross income reported on their income tax return for the prior calendar year in the amount of no more than \$50,000 or proof of enrollment in a qualifying government-provided income-based program. Through the use of their E-ZPass tag and an associated Low-Income Discount Plan on their E-ZPass account, qualifying drivers will benefit from a 25 percent discount on the full CBD E-ZPass toll rate for the applicable time of day after the first 10 trips in each calendar month (not including the overnight period, which will already be deeply discounted).]**

#### **ENHANCEMENT**

NYC's buses serve a greater share of low-income and minority households compared to other modes of transportation, including subways. **[MTA NYCT, when redesigning its bus networks, took into consideration areas with higher rates of low-income and minority households.]** The recently implemented Bus Network Redesigns in Staten Island and the Bronx have been well-received.

Network redesigns in Queens and Brooklyn are progressing. TBTA commits to working with MTA NYCT to address areas identified in the EA where bus service could be improved as the Brooklyn and Manhattan Bus Network Redesigns move forward.

[\*Although some people might not earn enough annually to have to file a tax return, they may still opt to submit a tax return to claim the credit. Free tax filing programs are available for qualifying individuals through the NYS Department of Taxation and Finance and the NYC Department of Consumer and Worker Protection (DCWP).]

**Taxis and FHV**

Tolling scenarios **[B, C, E, and F]** include exemptions or discounts (in the form of caps) on the number of trips that can be charged for taxis and/or FHVs. Exemptions and caps decrease the toll burden on taxi/FHV drivers, while increasing the toll rate for other drivers to meet the Project's congestion and revenue objectives. If taxis and FHVs are charged for each trip **[as in Tolling Scenarios A, D, and G]**, the demand for their service would decline, particularly in New York City, reducing trips and better meeting the Project objectives, but creating new direct costs and/or potential job insecurity. **Table ES-[5]** provides information on the magnitude of these effects. Because many New York City taxi and FHV drivers identify as part of an environmental justice population, this would result in **[potential]** disproportionately high and adverse effects **[without mitigation]**.

**[The EA released in August 2022 proposed several mitigation measures to address potential job insecurity. However, as a result of input during the public comment period, in this Final EA, new mitigation is proposed in place of those measures. Specifically, TBTA will ensure that these vehicles are not tolled more than once per day. With the addition of this new mitigation commitment, the Project will not result in a disproportionately high and adverse effect on taxi and FHV drivers in New York City.<sup>24</sup>]**

**[To ensure that the Project does not result in a potential disproportionately high and adverse effect on New York City taxi and FHV drivers, TBTA will institute the following mitigation.**

**MITIGATION**

**TBTA will ensure that New York City taxis and FHVs are not tolled more than once per day in the adopted CBD toll structure.\*]**

[\* Subchapter 4A describes the potential adverse effects and also provides additional narrative regarding what would occur in Tolling Scenarios A, D, and G if these vehicles were to be capped at once per day or exempted from the CBD toll. In each case, the potential effects fall within the range of effects explored through the tolling scenarios in the EA. Further, on page ES-24 of this Executive Summary, there is additional discussion regarding the range of effects, with specific attention to how the mitigation measures could change the effects of the Project. As explained, additional analysis conducted demonstrates that the results from these mitigation measures will still be within the range of effects explored in the EA. Finally, for discussion related to how this mitigation affects the analyses for each chapter, see Chapter 3, "Environmental Assessment Framework," Section 3.3.3.]

**[Traffic changes in environmental justice communities**

**As a result of traffic diversions as drivers seek to avoid the new toll, some environmental justice communities would experience lower traffic volumes; others would see increases in traffic. Following publication of the EA in August 2022, and based on public comments and input from the Environmental Justice Technical Advisory Group, the Project Sponsors conducted additional analysis related to these potential diversions. For the entire analysis, refer to Appendix 17D, "Technical Memorandum;" the following paragraphs provide a high-level summary of findings and conclusions.**

**Air pollutants associated with traffic and truck traffic. Appendix 17D, "Technical Memorandum" describes how and why traffic, and particularly truck traffic, contributes to pollutant burdens and the association between these burdens and health outcomes. Specifically, vehicles contribute to air pollutants like carbon monoxide, mobile source air toxics, nitrogen oxides, and particulate matter through brake and tire particulates, dispersal of roadway dust, and through the burning of fossil fuels in combustion engines.<sup>25</sup>**

**Although all motor vehicles produce air pollutants, emissions from trucks are of particular concern to near-road air quality, in part because of the pollutants they emit, but also because they disproportionately contribute more emissions than other types of vehicles.<sup>26</sup>**



Thus much of the analysis focuses on truck traffic; however, to ensure that the full range of effects is explored, Appendix 17D, “Technical Memorandum” also explores effects of the Project on non-truck traffic.

**Past land-use and transportation practices, trends and burdens.** The analysis in Appendix 17D, “Technical Memorandum” also provides a broader context by describing pre-existing pollutant and chronic disease burdens, as well as past land use policies and related trends in pollutant emissions and associated health outcomes. The region’s highway network was developed in the mid-20th Century and, in many cases, highway construction cut through apartment blocks, displacing residents and businesses. In other cases, the highways formed physical boundaries between neighborhoods, isolating residents from commercial centers and from former neighborhoods (e.g., the Cross Bronx Expressway). Over time, many neighborhoods adjacent to highways experienced an exodus of residents who were replaced by new ethnic or economic groups, leading to marked neighborhood change in some places, as new residents established new ethnic enclaves, many of which were minority and/or low-income.<sup>27</sup> Beyond land use and transportation practices, other policies and practices have contributed to or amplified these effects. For example, in some areas, discriminatory real estate practices such as redlining severely restricted where minority populations could locate, concentrating minority communities in certain areas.<sup>28</sup>

Regional air quality has been improving for many years, but the people of the 10-county study region – whether they live in communities designated as environmental justice communities or in other communities – are burdened with high levels of air pollutants and associated chronic disease, when compared to the rest of the United States (see Appendix 17D, “Technical Memorandum” for details on specific locations).

**Summary of effects on truck traffic.** All of the 434 census tracts within 300 meters of a highway<sup>29</sup> – both those that are environmental justice communities and those that are not – have at least one pollutant burden at or above the 80th national percentile or at least one chronic-disease burden above the 66.66th percentile, including 284 census tracts that could experience decreases or increases in truck traffic proximity (a measure of exposure to truck traffic) as a result of the Project.<sup>30</sup> The proportion of environmental justice census tracts existing within 300 meters of a highway (71.7 percent) mirrors the overall proportion of environmental justice census tracts in the 10-county environmental justice study area as a whole (70.6 percent).

Increases in truck traffic in currently overburdened communities, relative to national percentiles, would constitute an adverse effect. The analysis found that a larger number of census tracts identified as environmental justice tracts (56) would experience reduced truck traffic proximity when compared to non-environmental justice tracts (23); in essence, more environmental justice tracts than non-environmental census tracts would benefit from Project-related reductions in truck traffic. Further, roughly the same proportion of environmental justice and non-environmental justice communities would see decreases in traffic truck proximity related to the Project. However, while 41 percent of non-environmental justice census tracts would experience increases in truck traffic proximity, 50 percent of environmental justice census tracts would experience increases that would not be completely alleviated by the overall beneficial effects of the Project.

**Summary of effects on non-truck traffic.** Similar modeling was performed for non-truck traffic proximity changes resulting from the Project. In this case, 35 environmental justice communities with at least one census tract demonstrating a pre-existing air pollutant burden or chronic disease burden would potentially experience a decrease in highway non-truck traffic proximity. However, 33 communities with these same pre-existing air pollutant or chronic disease burdens could experience an increase in non-truck traffic



*proximity. All but 11 of these communities were also identified during the analysis of truck traffic. The results from this analysis and concerns raised by environmental justice communities drew particular attention to a projected increase in traffic on the FDR Drive, adjacent to communities in Lower Manhattan and the Lower East Side.*

*Mitigation for traffic diversions. To address potential Project-related traffic diversions, related air pollutants, and associated health effects, the Project Sponsors commit to a package of regional and place-based mitigation for communities which may experience Project-related increases in traffic.<sup>31</sup> The specific census tracts that would experience changes in traffic vary slightly by tolling scenario, but the communities largely remain the same across tolling scenarios.<sup>32</sup>*

*With respect to potential increases in truck traffic, those communities that already experience either pre-existing pollutant or chronic disease burdens at or above the 90th percentile, compared to the nation, would benefit from regional mitigation measures. Communities that already experience both pre-existing pollutant and chronic disease burdens above the 90th percentile, compared to the nation, would benefit from the regional measures as well as place-based mitigation (Figure ES-5).*

*For non-truck traffic, mitigation was identified for the FDR Drive adjacent to the Lower East Side and Lower Manhattan. Modeling indicated that the increase in this area could be mitigated by ensuring that vehicles traveling to Manhattan on the Brooklyn Bridge that drive north on the FDR Drive and use the exit at East Houston Street to immediately turn left and head back south on the FDR Drive, would be tolled, thus discouraging diversions of non-truck traffic. This mitigation will be implemented as part of the package of place-based mitigation measures.*

*The regional and place-based mitigation measures are summarized in Table ES-4. To fund these mitigation measures the Project Sponsors have committed \$155 million over 5 years. The Project Sponsors commit to these measures, regardless of the tolling structure eventually adopted. An adaptive management approach will be used which will include monitoring the efficacy of mitigation, stakeholder consultation, and adjustments as warranted. Importantly, with these mitigation commitments incorporated, the Project would not result in a disproportionately high and adverse effect on environmental justice communities.*

**Combined Number of Pre-Existing Pollutant and Chronic Disease Burdens At or Above the 90th Percentile**

Color/Pattern	Count
Light Brown	2 - 3
Orange	4 - 5
Dark Orange/Red	6 - 7

**Numbered Locations:**

- High Bridge-Morrisania and Crotona-Tremont
- Hunts Point-Mott Haven and Pelham-Throgs Neck
- Hunts Point-Mott Haven
- Pelham-Throgs Neck
- Northeast Bronx
- East Harlem
- Randall's Island
- Downtown Brooklyn-Fort Greene
- South Williamsburg
- Orange-East Orange-Newark
- Fort Lee

Note: Percentiles are national. Census Tract 3009, Nassau County not shown. Potential truck volume increases and decreases on roadways within the tract would ultimately cancel each other out and result in no change of truck traffic proximity for the residential populations within the tract.

**[Table ES-4. Regional and Place-Based Mitigation Measures]<sup>1</sup>**

MITIGATION MEASURES	BENEFIT AND RESULT OF MITIGATION	5-YEAR FUND-ING	RELEVANT LOCATION(S)	FUNDING SOURCE	IMPLEMEN-TATION LEAD
Regional Mitigation					
Further reduced overnight toll	Minimize/avoid truck diversions	\$30 million	10-county environmental justice study area	CBD Tolling Program	TBTA
Expand NYC Clean Trucks Program	NOx and PM <sub>2.5</sub> reductions from ~500 new clean trucks	\$20 million		CBD Tolling Program	NYCDOT
Expand NYCDOT Off-Hours Delivery Program	Safety and emissions reduction benefits resulting from reduced truck traffic during the day	\$5 million		CBD Tolling Program	NYCDOT
Place-Based Mitigation					
Toll vehicles traveling northbound on the FDR Drive that exit at East Houston Street and then travel southbound on FDR Drive	25 to 35 percent of the non-truck traffic increases on the FDR Drive could be mitigated	N/A	FDR Drive between the Brooklyn Bridge and East Houston Street	N/A	TBTA
Replacement of Transport Refrigeration Units (TRUs) at Hunts Point Produce Market	Major NOx and PM <sub>2.5</sub> reductions from the replacement of up to 1,000 TRUs	\$15 million <sup>2</sup>	Hunts Point	MTA CMAQ Program	NYCDOT
Implement Electric Truck Charging Infrastructure	NOx and PM <sub>2.5</sub> reductions from electric vehicles using 35 new chargers (at seven stations)	\$20 million	After toll rates are set, a process that includes both additional analyses and community input will take place to determine specific locations	\$10 million Federal CRP + \$10 million CBD Tolling Program	NYSDOT
Install Roadside Vegetation to Improve Near-Road Air Quality	Improves near-road air quality by pollutant capture from ~4,000 trees and ~40,000 shrubs	\$10 million		CBD Tolling Program	TBTA with Relevant State and Local Agencies
Renovate Parks and Greenspace in Environmental Justice Communities	Increases overall community well-being. 2-5 park/ greenspace renovations depending on size and complexity.	\$25 million		CBD Tolling Program	TBTA with Relevant State and Local Agencies
Install Air Filtration Units in Schools Near Highways	Removes air pollutants from classrooms. 25-40 schools depending on school size and complexity of existing HVAC system.	\$10 million		CBD Tolling Program	TBTA with Relevant State and Local Agencies
Establish Asthma Case Management Program and Bronx Center	Reduces hospitalizations and doctor visits, decreases days and nights with symptoms and missed school days – program expansion up to 25 schools	\$20 million		CBD Tolling Program	NYC DOHMH

<sup>1</sup> An additional \$5 million has been allocated for mitigation and enhancement measures related to monitoring across other topics, along with \$47.5 million for the low-income toll discount discussed above. Enhancement measures include air quality monitoring that will expand NYC's existing monitoring network. Locations will be selected in consideration of the traffic and air quality analyses in the EA and in coordination with environmental justice stakeholders and relevant state and local agencies. This will complement the regional and place-based mitigation measures related to traffic diversions outlined in Table ES-5 (see Chapter 10, "Air Quality," for details).

<sup>2</sup> After three years, any remaining funds designated for TRU replacements may also be used for clean truck replacement vouchers through the NYC Clean Trucks Program.



**Process for final siting of mitigation measures.** Of the seven place-based mitigation measures identified, five are flexible in where they can be implemented, while the tolling of movements into the Manhattan CBD at East Houston Street and the replacement of transport refrigeration units (TRUs) at Hunts Point Produce Market are specific to those particular locations.

After the actual toll rates are adopted, a process that includes both additional analyses and community input will take place to determine the sites of the other five place-based mitigation measures (e.g., in which schools to install air filtration units, or on what roadways to plant vegetation). This will require coordination between the Project Sponsors, the Environmental Justice Community Group (representing the 10-county environmental justice study area, and as described further in Table ES-6), the relevant communities receiving the place-based mitigation, and local implementing agencies, and will include needs assessments and feasibility screening to determine the range of possibilities.

The Project Sponsors will work with the appropriate implementing agencies through existing public engagement and participation processes to then prioritize and select the specific locations. The specific place-based mitigation sites will be made available to the public through the Project website, as well as direct emails to members of the public who have signed up to receive information about the Project.

The specific feasibility factors and forms of engagement vary by mitigation and include:

- **Electric Truck Charging Infrastructure:** This mitigation will be implemented through the Federal Carbon Reduction Program (CRP) using funds received by NYSDOT and will therefore be limited to locations in New York. Siting considerations will include potential visual impacts, proximity to highways (to minimize travel on local roads), and the study of potential traffic and noise impacts. The NYMTC Clean Freight Corridors Study – a study developed by the metropolitan planning organization in consultation with motor carriers, utility companies, fuel infrastructure manufacturers/suppliers, truck stop operators, industrial real estate companies, and community and advocacy organizations – will be used to help identify priority locations. Such groups will be re-engaged, as warranted, along with state and local officials, to provide feedback in the course of identifying appropriate locations.
- **Roadside Vegetation to Improve Near-Road Air Quality:** The Project Sponsors will work with relevant local and state agencies to assess the availability of roadside space and the presence of existing plantings, as well as access and maintenance considerations, to identify appropriate sites near sensitive receptors (e.g., schools, day care, senior or community centers, or outdoor recreational facilities) as locations for new plantings. To align with community priorities, the Project Sponsors will engage with community stakeholders, elected officials, and the Environmental Justice Community Group.
- **Parks and Greenspace in Environmental Justice Communities:** The Project Sponsors will work with relevant state and local agencies to assess potential locations for park and greenspace investments in the affected communities, including in existing parkland where the expansion of green space, tree planting, or other upgrades is feasible. The agencies will solicit input on prioritization of locations and treatments from the Environmental Justice Community Group, local officials, and other community stakeholders.
- **Air Filtration Units in Schools Near Highways:** The Project Sponsors will work with relevant school authorities to assess needs and analyze feasibility of upgrading existing filtration systems in schools in census tracts within 300 meters of highways where truck traffic is projected to increase. Factors will include the design and



**performance of existing HVAC systems, the facility's proximity to highways, and the area asthma rates, as well as scheduled capital projects. The Project Sponsors will work with relevant state and local agencies and solicit input from community stakeholders to determine locations where air filtration upgrades will be most impactful.**

- **Asthma Case Management Program and Center: This mitigation will expand on the success of existing city programs operating within the five New York City counties.**
  - ❖ **Asthma Case Management Program – NYC Department of Health and Mental Hygiene (DOHMH) will conduct a needs assessment to identify schools in affected census tracts with existing high rates of asthma. Additionally, NYC DOHMH will engage with school leadership on expansion of the Asthma Care Management Program and will solicit input from the Environmental Justice Community Group, parents, and other community stakeholders on priority locations that should be prioritized and how to best reach families of children with asthma.**
  - ❖ **Asthma Center – Selection of a location in the Bronx will include consideration of asthma rates, population concentration, proximity to sensitive receptors, the location of existing facilities and services, accessibility via public transportation, and availability of suitable space. NYC DOHMH will work with community stakeholders to solicit input on programming and outreach strategies to ensure that the center maximizes its benefit to people with asthma.**

### **Will the mitigation measures change the results of the EA?**

**The short answer is no, the mitigation measures neither require a change in the tolling scenarios used for the analyses in the EA, nor change the fundamental conclusions of the EA. In the Final EA, the Project Sponsors commit to a number of mitigation measures that affect the tolling structure and/or the cost of the CBD Tolling Program. These include: 1) a further reduced overnight toll for trucks and other vehicles; 2) tolls of no more than once per day for taxis and FHV's; 3) mitigation measures to address potential increased traffic volumes in certain environmental justice communities as a result of Project-related traffic diversions; and 4) a discounted toll rate for frequent low-income drivers for the first five years of the Project.**

**While some of the tolling scenarios analyzed in the EA reflect this treatment of taxis and FHV's (Tolling Scenarios B, F, and modified scenarios A, D, and G), none include the further reduced overnight toll or the low-income discounted toll rate. Thus, additional analysis was conducted to ensure that with these mitigation measures included, the potential Project effects would still fall within the range of effects modeled for the EA.**

**To analyze the other mitigation measures' effects, a tolling scenario was developed using modified Scenario B1 as the basis (a version of Scenario B that meets the revenue target, as described in Appendix 2E, page 2E-2; and Appendix 4A, page 4A.2-1). This tolling scenario includes a cap on tolls for taxis and FHV's of once per day and an entirely free period from 12:00 a.m. to 6:00 a.m. for all vehicles, including trucks. For this analysis, the time range and toll rate reduction for the further reduced overnight mitigation were expanded beyond the commitments in the Final EA (tolls that are at or below 50 percent of the peak toll rate from at least 12:00 a.m. to 4:00 a.m.) to capture any differences in effects from the tolling scenarios used in the EA. This modified scenario – referred to as B2 in the following text – demonstrates that the mitigation measures described in the Final EA could be incorporated into the CBD Tolling Program, with the potential effects still falling within the range of effects explored through the current tolling scenarios. Specifically:**

1. **VMT and volume reduction objectives of the Project. Tolling Scenario B2 results in a VMT reduction of 8.4 percent and a 17 percent reduction in vehicles entering the**

**Manhattan CBD. These are within the range of effects already modeled in the EA (described in Tables 4A-7 and 4A-5).**

2. **Toll rate.** Tolling Scenario B2 requires a peak E-ZPass toll rate of \$13.20, which remains within the range of tolling scenarios in the EA (see Table 2-3).
3. **Revenue target.** B2 meets the revenue target, generating \$1.07 billion, which is sufficient to cover the cost of the new mitigation measures the Project Sponsors have committed to in the Final EA (including the discounted toll rate for low-income frequent drivers) and, again, does not exceed the range of tolling scenarios in the EA.

**Importantly, since it would result in effects within the range of effects identified above, Tolling Scenario B2 would not have effects on traffic diversions (highways and intersections), or on related air quality, or on environmental justice populations, beyond those already described in the EA.**

4. **Traffic diversions in environmental justice communities.** Of the tolling scenarios evaluated in the EA for traffic diversions near environmental justice populations, Tolling Scenario B had the highest increase in trucks on the Cross Bronx Expressway at Macombs Road (see Chapter 10, “Air Quality,” Section 10. 3.2.3). Tolling Scenario B2 would have fewer trucks on this segment compared to Scenario B and would have truck volume increases within the range identified at the other two locations where highway link analysis was performed in the EA (I-95 west of the George Washington Bridge, and at the Robert F. Kennedy Bridge Queens approach).

**The Project Sponsors further concluded that traffic effects from the discounted toll rate for low-income drivers would fall within the range of effects explored through the tolling scenarios in the EA, given the small number of low-income frequent drivers who have no reasonable alternative, relative to the total number of drivers.**

**As noted, Tolling Scenario B2 included an entirely free period from 12:00 a.m. to 6:00 a.m., which is a lower toll rate and a longer overnight period than required by the legislation or committed to in the Final EA. Additionally, Tolling Scenario B2 included two other elements that are not required by the legislation and are not part of mitigation commitments in the Final EA – a cap on tolls for trucks at twice per day and an exemption for all buses. This further demonstrates that the mitigation commitments in the Final EA would not result in effects beyond those already described. Most importantly, the additional analysis demonstrates that these changes to the tolling scenarios do not change the fundamental conclusions of the EA.]**

### **How has the public been involved?**

The Project Sponsors implemented a robust public and agency outreach plan to solicit input from residents, businesses, Federal/regional/state/local agencies, across the 28-county study area. Information about the Project and the process was conveyed via the Project website, a Project Fact Sheet, social media, direct email, and multiple print media outlets. During the early outreach period, 10 virtual public outreach and 9 environmental justice webinar sessions were held, for a total of 19 sessions. Real-time answers were provided to those who submitted written factual, technical and logistical questions related to the Project and process. The webinars, which remain available for viewing, were streamed live on YouTube, and recordings were subsequently posted on YouTube for on-demand viewing. As of February 2022, there were over 14,000 views of these recordings, combined. Meeting attendees were asked to fill out an optional survey; of the 309 responses received, roughly one-third identified themselves as minority.

***[The EA was released to the public on August 10, 2022, initiating a 30-day formal public comment period, which was subsequently extended by 14 days to September 23, 2022, in response to requests. During the 44-day comment window, more than 14,000 individual submissions and more than 55,000 form letters were received. Many submissions had multiple comments, resulting in over 22,000 individual comments collected by the Project Sponsors and FHWA through a combination of email, traditional mail, voicemail, fax, and an online form, as well as through oral testimony provided at six virtual hearings on the EA. During the virtual hearings, 552 speakers offered oral testimony and many more participated during the livestream or watched later via the Project website or YouTube (over 11,200 views as of December 2022).]***

To encourage meaningful engagement with environmental justice populations, FHWA and the Project Sponsors provided smaller meetings in the form of a technical advisory group and a stakeholder working group.

#### ***Environmental Justice Technical Advisory Group.***

FHWA and the Project Sponsors invited community leaders and advocacy group representatives with knowledge of and experience with environmental justice populations to participate. Thirty-seven groups were invited, of which 16 groups accepted, and 14 groups have participated in one or more of the meetings to date. The Environmental Justice Technical Advisory Group met three times prior to the publication of this EA and ***[, subsequently, four times through January 2023].***

#### ***Environmental Justice Stakeholder Working Group.***

During the early outreach, individuals from populations throughout the study area were able to request participation or suggest others as participants in this group by using a form on the Project website or by contacting the Project Sponsors. All twenty-seven people who were nominated or expressed interested in participating were invited to join the Working Group, and 22 individuals attended one or both meetings. This group met twice prior to the publication of this EA and again during the EA comment period.

In both groups, the agendas were largely driven by the participants while the Project Sponsors listened and provided answers to questions. The discussions during these sessions, along with the comments heard during the public outreach and environmental justice webinars, led the Project Sponsors to undertake additional analyses and develop additional mitigation measures ***[as described earlier].***

#### ***Environmental Justice Outreach Response***

*As an independent action, MTA is currently transitioning its fleet to zero-emission buses. MTA is committed to prioritizing traditionally underserved communities and those impacted by poor air quality and climate change and has developed a new Environmental Justice Scoring framework to actively incorporate these priorities in the deployment phasing process of the transition.*

*Based on feedback received during the outreach conducted for the CBD Tolling Program and concerns raised by members of environmental justice communities, MTA is committed to prioritizing the Kingsbridge Depot and Gun Hill Depot, both located in and serving primarily environmental justice communities in Upper Manhattan and the Bronx, when electric buses are received in MTA's next major procurement of battery electric buses, which **[began]** in **[late]** 2022. This independent effort by MTA is anticipated to provide air quality benefits to the environmental justice communities in the Bronx.*



Table ES-[5]. Summary of Benefits and Effects for the CBD Tolling Alternative with Comparison of Tolling Scenarios

EA CHAPTER / ENVIRONMENTAL CATEGORY	TOPIC	SUMMARY OF EFFECTS	LOCATION	DATA SHOWN IN TABLE	TOLLING SCENARIO							POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
					A	B	C	D	E	F	G		
4A – Transportation: Regional Transportation Effects and Modeling	Vehicle Volumes	Decreases in daily vehicle trips to Manhattan CBD overall.  Some diversions to different crossings to Manhattan CBD or around the Manhattan CBD altogether, depending on tolling scenario. As traffic, including truck trips, increase on some circumferential highways, simultaneously there is a reduction in traffic on other highway segments to the CBD.	Crossing locations to Manhattan CBD	% Increase or decrease in daily vehicles entering the Manhattan CBD relative to No Action Alternative	-15%	-16%	-17%	-19%	-20%	-18%	-17%	No	No mitigation needed. Beneficial effects
	Auto Journeys to Manhattan CBD		Manhattan CBD	% Increase or decrease in worker auto journeys to Manhattan CBD relative to No Action Alternative	-5%	-5%	-7%	-9%	-11%	-10%	-6%	No	No mitigation needed. Beneficial effects
				Absolute increase or decrease in daily worker auto trips to Manhattan CBD relative to No Action Alternative	-12,571	-12,883	-17,408	-24,017	-27,471	-24,433	-14,578		
	Truck Trips Through Manhattan CBD		Manhattan CBD	Increase or decrease in daily truck trips through Manhattan CBD (without origin or destination in the CBD) relative to No Action Alternative	-4,645 (-55%)	[-4,967] (-59%)	-5,253 (-63%)	-5,687 (-68%)	-6,604 (-79%)	-6,784 (-81%)	[-1,734] (-21%)	No	No mitigation needed. Beneficial effects
	Transit Journeys		Manhattan CBD	% Increase or decrease in daily Manhattan CBD-related transit journeys relative to No Action Alternative	+1 to +3%							No	No mitigation needed. No adverse effects
	Traffic Results	Overall decrease in vehicle-miles traveled (VMT) in the Manhattan CBD and region overall in all tolling scenarios and some shift from vehicle to transit mode.	Manhattan CBD	% Increase or decrease in daily VMT relative to No Action Alternative	-9% to -7%							No	No mitigation needed. Beneficial effects in Manhattan CBD, New York City (non-CBD), north of New York City, and Connecticut; although there would be VMT increases in Long Island and New Jersey, the effects would not be adverse.
			NYC (non-Manhattan CBD)		-1 to 0%								
			New York north of NYC		-1% to 0%								
			Long Island		Less than (+) 0.2% change								
			New Jersey		Less than (+) 0.2% change								
Connecticut			Less than (+) 0.2% change										



EA CHAPTER / ENVIRONMENTAL CATEGORY	TOPIC	SUMMARY OF EFFECTS	LOCATION	DATA SHOWN IN TABLE	TOLLING SCENARIO							POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
					A	B	C	D	E	F	G		
4B – Transportation: Highways and Local Intersections	Traffic – Highway Segments	The introduction of the CBD Tolling Program may produce increased congestion on highway segments approaching on circumferential roadways used to avoid Manhattan CBD tolls, resulting in increased delays and queues in midday and PM peak hours on certain segments in some tolling scenarios: <ul style="list-style-type: none"><li>Westbound Long Island Expressway (I-495) near the Queens-Midtown Tunnel (midday)</li><li>Approaches to westbound George Washington Bridge on I-95 (midday)</li><li>Southbound and northbound FDR Drive between East 10th Street and Brooklyn Bridge (PM)</li><li>Other locations will see an associated decrease in congestion particularly on routes approaching the Manhattan CBD</li></ul>	10 highway segments (AM)	Highway segments with increased delays and queues in peak hours that would result in adverse effects	0 out of 10 highway corridors in the analyzed tolling scenario (Tolling Scenario D)							Yes	<b>Mitigation needed.</b> The Project Sponsors will implement a monitoring plan prior to implementation with post-implementation data collected approximately three months after the start of <b>[tolling]</b> operations and including thresholds for effects; if the thresholds are reached or crossed, the Project Sponsors will implement Transportation Demand Management (TDM) measures, such as ramp metering, motorist information, signage at all identified highway locations with adverse effects upon implementation of the Project. <b>[NYSDOT owns and maintains the relevant segments of the Long Island Expressway and I-95. The relevant segment of the FDR Drive is owned by NYSDOT south of Montgomery Street and NYCDOT north of Montgomery Street. Implementation of TDM measures will be coordinated between the highway owners and the owners of any assets relevant to implementing the TDM.]</b>  Post-implementation <b>[of TDM measures]</b> , the Project Sponsors will monitor effects and, if needed, TBTA will modify the toll rates, crossing credits, exemptions, and/or discounts <b>[within the parameters of the adopted toll schedule]</b> to reduce adverse effects.
			10 highway segments (midday)		2 out of 10 highway corridors in the analyzed tolling scenario (Tolling Scenario D), as well as Tolling Scenarios E and F								
			10 highway segments (PM)		1 out of 10 highway corridors in the analyzed tolling scenario (Tolling Scenario D), as well as Tolling Scenarios E and F								
	Intersections	Shifts in traffic patterns, with increases in traffic at some locations and decreases at other locations, would change conditions at some local intersections within and near the Manhattan CBD. Of the 102 intersections analyzed, most intersections would see reductions in delay.	363 locations (All day)	Number of instances of intersections with an increase in volumes of 50 or more vehicles in the peak hours.	9	10	24	50	48	50	10	Yes	<b>Mitigation needed.</b> <b>[NYCDOT]</b> will monitor those intersections where <b>[potential]</b> adverse effects were identified and implement appropriate signal timing adjustments to mitigate the effect, per NYCDOT’s normal practice.  <b>Enhancement</b> Refer to the overall enhancement on monitoring at the end of this table.
			102 locations (AM)		2	2	3	3	3	3	2		
			102 locations (midday)		1	2	4	16	16	17	0		
			102 locations (PM)		1	1	1	10	9	9	1		
			57 locations (overnight)		5	5	16	21	20	21	5		
			Potential adverse effects on four local intersections in Manhattan: Trinity Place and Edgar Street (midday); East 36th Street and Second Avenue (midday); East 37th Street and Third Avenue (midday); East 125th Street and Second Avenue (AM, PM)	4 locations	Locations with potential adverse effects that <b>[will]</b> be addressed with signal timing adjustments	0	0	0	4	4	4		



EA CHAPTER / ENVIRONMENTAL CATEGORY	TOPIC	SUMMARY OF EFFECTS	LOCATION	DATA SHOWN IN TABLE	TOLLING SCENARIO							POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
					A	B	C	D	E	F	G		
4C – Transportation: Transit	Transit Systems	The Project would generate a dedicated revenue source for investment in the transit system. Transit ridership would increase by 1 to 2 percent systemwide for travel to and from the Manhattan CBD, because some people would shift to transit rather than driving. Increases in transit ridership would not result in adverse effects on line-haul capacity on any transit routes.	New York City Transit	% Increase or decrease in total daily transit ridership systemwide	1.5% to 2.1%							No	No mitigation needed. No adverse effects
			PATH		0.8% to 2.0%								
			Long Island Rail Road		0.6% to 2.0%								
			Metro-North Railroad		0.6% to 1.9%								
			NJ TRANSIT commuter rail		0.3% to 2.3%								
			MTA/NYCT Buses		1.3% to 1.6%								
			NJ TRANSIT Bus		0.5% to 1.1%								
			Other buses (suburban and private operators)		0.0% to 0.9%								
			Ferries (Staten Island Ferry, NYC Ferry, NY Waterway, Seastreak)		2.5% to 3.5%								
			Roosevelt Island Tram		1.7% to 4.1%								
	Bus System Effects	Decreases in traffic volumes within the Manhattan CBD and near the 60th Street boundary of the Manhattan CBD would reduce the roadway congestion that adversely affects bus operations, facilitating more reliable, faster bus trips.	Manhattan local buses	% Increase or decrease at maximum passenger load point	Increases of 0.5% to 1.2%							No	No mitigation needed. No adverse effects
			Bronx express buses		-1.6% to 2.2%								
			Queens local and express buses (via Ed Koch Queensboro Bridge)		2.0% to 2.8%								
			Queens express buses (via Queens-Midtown Tunnel)		-1.3% to 4.1%								
			Brooklyn local and express buses		1.3% to 2.6%								
			Staten Island express routes (via Brooklyn)		3.7% to 4.5%								
			Staten Island express routes (via NJ)		1.0% to 2.8%								
			NJ/West of Hudson buses (via Holland Tunnel)		-1.4% to 1.4%								
			NJ/West of Hudson buses (via Lincoln Tunnel)		0.4% to 1.5%								



EA CHAPTER / ENVIRONMENTAL CATEGORY	TOPIC	SUMMARY OF EFFECTS	LOCATION	DATA SHOWN IN TABLE	TOLLING SCENARIO							POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
					A	B	C	D	E	F	G		
4C – Transportation: Transit (Cont'd)	Transit Elements	<p>Increased ridership would affect passenger flows with the potential for adverse effects at certain vertical circulation elements (i.e., stairs and escalators) in five transit stations:</p> <ul style="list-style-type: none"> <li>Hoboken Terminal, Hoboken, NJ PATH station</li> <li>Times Sq-42 St/42 St-Port Authority Bus Terminal subway station in the Manhattan CBD (N, Q, R, W, and S; Nos. 1, 2, 3, and 7; and A, C, E lines)</li> <li>Flushing-Main St subway station, Queens (No. 7 line)</li> <li>14th Street-Union Square subway station in the Manhattan CBD (Nos. 4, 5, and 6; and L, N, Q, R, W lines)</li> <li>Court Square subway station, Queens (No. 7 and E, G, M lines)</li> </ul>	Hoboken Terminal–PATH station (NJ) Stair 01/02	Net passenger increases or at stair in the peak hour	45	72	122	164	240	205	139	Yes	<b>Mitigation needed for Tolling Scenarios E and F.</b> TBTA will coordinate with NJ TRANSIT and PANYNJ to monitor pedestrian volumes on Stair 01/02 one month prior to commencing tolling operations to establish a baseline, and two months after Project operations begin. If a comparison of Stair 01/02 passenger volumes before and after implementation shows an incremental change that is greater than or equal to 205, then TBTA will coordinate with NJ TRANSIT and PANYNJ to implement improved signage and wayfinding to divert some people from Stair 01/02, and supplemental personnel if needed.
			42 St-Times Square–subway station (Manhattan) Stair ML6/ML8 connecting mezzanine to uptown 1/2/3 lines subway platform	Relative increase or decrease in passenger volumes at station OVERALL as compared to Tolling Scenario E (not only at the affected stair or location) in the peak hour, peak period	63%	59%	68%	82%	100%	82%	56%	Yes	<b>Mitigation needed.</b> TBTA will coordinate with MTA NYCT to implement a monitoring plan for this location. The plan will identify a baseline, specific timing, and a threshold for additional action. If that threshold is reached, TBTA will coordinate with MTA NYCT to remove the center handrail and standardize the riser, so that the stair meets code without the hand rail. The threshold will be set to allow for sufficient time to implement the mitigation so that the adverse effect does not occur.
			Flushing-Main St subway station (Queens)–Escalator E456 connecting street to mezzanine level	Relative increase or decrease in passenger volumes at station OVERALL as compared to Tolling Scenario E (not only at the affected stair or location) in the peak hour, peak period	116%	91%	108%	116%	100%	133%	72%	Yes	<b>Mitigation needed.</b> TBTA will coordinate with MTA NYCT to implement a monitoring plan for this location. The plan will identify a baseline, specific timing, and a threshold for additional action. If that threshold is reached, MTA NYCT will increase the speed from 100 feet per minute (fpm) to 120 fpm.
			Union Sq subway station (Manhattan)–Escalator E219 connecting the L subway line platform to the Nos. 4/5/6 line mezzanine	Relative increase or decrease in passenger volumes at station OVERALL as compared to Tolling Scenario E (not only at the affected stair or location) in the peak hour, peak period	63%	82%	87%	102%	100%	95%	61%	Yes	<b>Mitigation needed.</b> TBTA will coordinate with MTA NYCT to implement a monitoring plan for this location. The plan will identify a baseline, specific timing, and a threshold for additional action. If that threshold is reached, MTA NYCT will increase the escalator speed from 100 fpm to 120 fpm.



EA CHAPTER / ENVIRONMENTAL CATEGORY	TOPIC	SUMMARY OF EFFECTS	LOCATION	DATA SHOWN IN TABLE	TOLLING SCENARIO							POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
					A	B	C	D	E	F	G		
4C – Transportation: Transit (Cont’d)	Transit Elements (Cont’d)	Increased ridership would affect passenger flows with the potential for adverse effects at certain vertical circulation elements (i.e., stairs and escalators) in five transit stations (cont’d)	Court Sq subway station (Queens)–Stair P2/P4 to Manhattan-bound No. 7 line	Relative increase or decrease in passenger volumes at station OVERALL as compared to Tolling Scenario E (not only at the affected stair or location) in the peak hour, peak period	98%	90%	102%	104%	100%	117%	97%	Yes	Mitigation needed. TBTA will coordinate with MTA NYCT to implement a monitoring plan for this location. The plan will identify a baseline, specific timing, and a threshold for additional action. If that threshold is reached, TBTA will coordinate with MTA NYCT to construct a new stair from the northern end of the No. 7 platform to the street. The threshold will be set to allow for sufficient time to implement the mitigation so that the adverse effect does not occur.
4D – Transportation: Parking	Parking Conditions	All tolling scenarios would result in a reduction in parking demand within the Manhattan CBD of a similar magnitude to the reduction in auto trips into the Manhattan CBD. With a shift from driving to transit, there would be increased parking demand at subway and commuter rail stations and park-and-ride facilities outside the Manhattan CBD.	Manhattan CBD	Narrative	Reduction in parking demand due to reduction in auto trips to CBD							No	No mitigation needed. Beneficial effects
			Transit facilities	Narrative	Small changes in parking demand at transit facilities, corresponding to increased commuter rail and subway ridership							No	No mitigation needed. No adverse effects
4E – Transportation: Pedestrians and Bicycles	Pedestrian Circulation	Increased pedestrian activity on sidewalks outside transit hubs because of increased transit use. At all but one location in the Manhattan CBD (Herald Square/Penn Station), the increase in transit riders would not generate enough new pedestrians to adversely affect pedestrian circulation in the station area. Outside the Manhattan CBD, transit usage at individual stations would not increase enough to adversely affect pedestrian conditions on nearby sidewalks, crosswalks, or corners.	Herald Square/Penn Station NY	Sidewalks, corners, and crosswalks with pedestrian volumes above threshold in AM / PM peak periods	Adverse effects on pedestrian circulation at one sidewalk segment and two crosswalks							Yes	Mitigation needed. [NYCDOT] will implement a monitoring plan at this location. The plan will include a baseline, specific timing, and a threshold for additional action. If that threshold is reached, [NYCDOT] will increase pedestrian space on sidewalks and crosswalks via physical widening and/or removing or relocating obstructions.
	Bicycles	Small increases in bicycle trips near transit hubs and as a travel mode	Manhattan CBD	Narrative	Small increases in bicycle trips near transit hubs with highest increases in pedestrian trip share							No	No mitigation needed. No adverse effects
			Outside Manhattan CBD	Narrative	Some shifts from automobile to bicycles							No	No mitigation needed. No adverse effects
	Safety	No adverse effects	Overall	Narrative	No substantial increases in pedestrian volumes or increased safety concerns, including at existing identified high-crash locations. Overall, with fewer vehicular trips entering and exiting the Manhattan CBD, the CBD Tolling Alternative could result in reduced traffic volumes at these locations. This would help to reduce vehicle-vehicle and vehicle-pedestrian conflicts, leading to an overall benefit to safety.							No	No mitigation needed. No adverse effects
5A – Social Conditions: Population	Benefits	Benefits in and near the Manhattan CBD	28-county study area	Narrative	Benefits in and near the Manhattan CBD related to travel-time savings, improved travel-time reliability, reduced vehicle operating costs, improved safety, reduced air pollutant emissions, and predictable funding source for transit improvements. This would positively affect community connections and access to employment, education, healthcare, and recreation for residents.							No	No mitigation needed. Beneficial effects
	Community Cohesion	Changes to travel patterns, including increased use of transit, resulting from new toll	28-county study area	Narrative	Changes to travel patterns, including increased use of transit, as a result of the Project would not adversely affect community cohesion or make it more difficult for people to connect with others in their community, given the extensive transit network connecting to the Manhattan CBD and the small change in trips predicted.							No	No mitigation needed. No adverse effects (see “Environmental Justice” below for mitigation related to increased costs for low-income drivers).



EA CHAPTER / ENVIRONMENTAL CATEGORY	TOPIC	SUMMARY OF EFFECTS	LOCATION	DATA SHOWN IN TABLE	TOLLING SCENARIO							POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
					A	B	C	D	E	F	G		
5A – Social Conditions: Population (Cont'd)	Indirect Displacement	No notable changes in socioeconomic conditions or cost of living so as to induce potential involuntary displacement of residents	Manhattan CBD	Narrative	The Project would not result in the potential for indirect (involuntary) residential displacement. It would not result in substantial changes to market conditions so as to lead to changes in housing prices, given that real estate values in the Manhattan CBD are already high and the many factors that affect each household's decisions about where to live. In addition, low-income residents of the CBD would not experience a notable increase in the cost of living as a result of the Project because of the lack of change in housing costs, the many housing units protected through New York's rent-control, rent-stabilization, and other similar programs, the tax credit available to CBD residents with incomes of up to \$60,000, and the conclusion that the cost of goods would not increase as a result of the Project (see "Economic Conditions" below).							No	No mitigation needed. No adverse effects
	Community Facilities and Services	Increased cost for community facilities and service providers in the Manhattan CBD, their employees who drive, and clientele who drive from outside the CBD	Manhattan CBD	Narrative	The Project would increase costs for community service providers that operate vehicles into and out of the Manhattan CBD and for people who travel by vehicle to community facilities and services in the Manhattan CBD, as well as residents of the CBD and employees of community facilities who use vehicles to travel to community facilities outside the CBD. Given the wide range of travel options other than driving, the cost for users to drive to community facilities and services would not constitute an adverse effect on community facilities and services.							No	No mitigation needed. No adverse effects
	Effects on Vulnerable Social Groups	Benefits to vulnerable social groups from new funding for MTA Capital Program	28-county study area	Narrative	<p>The Project would benefit certain vulnerable social groups, including elderly populations, persons with disabilities, transit-dependent populations, and non-driver populations by creating a funding source for the MTA 2020–2024 Capital Program (and subsequent capital programs and by reducing congestion in the Manhattan CBD).</p> <p>Elderly individuals would benefit from the travel-time and reliability improvements to bus service with the CBD Tolling Alternative, as bus passengers tend to be older than riders on other forms of transit, such as the subway and, as described above, bus passengers in the Manhattan CBD would benefit from travel-time savings due to the decrease in congestion.</p> <p>People over the age of 65 with a qualifying disability receive a reduced fare on MTA subways and buses, and elderly individuals with a qualifying disability can also receive MTA's paratransit service, including taxis and FHV's operating on behalf of MTA to transport paratransit users. Elderly people with disabilities and low-income individuals who drive to the Manhattan CBD would be entitled to the same mitigation and enhancements proposed for low-income and disabled populations, in general. Other elderly individuals who drive to the Manhattan CBD would pay the toll.</p>							No	No mitigation needed. No adverse effects
	Access to Employment	Increased cost for small number of people who drive to work	28-county study area	Narrative	Decrease in work trips by driving modes to and within the Manhattan CBD, with an offsetting increase in transit ridership. Those who drive despite the CBD toll would do so based on the need or convenience of driving and would benefit from the reduced congestion in the Manhattan CBD. Negligible effect (less than 0.1%) on travel to employment within the Manhattan CBD and reverse-commuting from the CBD due to the wide range of transit options available and the small number of commuters who drive today.							No	No mitigation needed. No adverse effects
5B – Social Conditions: Neighborhood Character		No notable change in neighborhood character	Manhattan CBD	Narrative	The changes in traffic patterns on local streets are unlikely to change the defining elements of the neighborhood character of the Manhattan CBD.							No	No mitigation needed. No adverse effects
			Area near 60th Street Manhattan CBD boundary	Narrative	Changes in parking demand near the 60th Street CBD boundary (including increases just north of 60th Street and decreases just to the south) would not create a climate of disinvestment that could lead to adverse effects on neighborhood character nor alter the defining elements of the neighborhood character of this area.							No	No mitigation needed. No adverse effects
5C – Social Conditions: Public Policy		No effect	28-county study area	Narrative	The Project would be consistent with regional transportation plans and other public policies in place for the regional study area and the Manhattan CBD.							No	No mitigation needed. No adverse effects



EA CHAPTER / ENVIRONMENTAL CATEGORY	TOPIC	SUMMARY OF EFFECTS	LOCATION	DATA SHOWN IN TABLE	TOLLING SCENARIO							POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
					A	B	C	D	E	F	G		
6 – Economic Conditions	Benefits	Regional economic benefits	28-county study area	Narrative	Economic benefit through congestion relief in terms of travel-time savings and travel-time reliability improvements, which would increase productivity and utility, as well as safety improvements and reduced vehicle operating costs associated with reductions in congestion.							No	No mitigation needed. Beneficial effects
	Economic Effects of Toll Costs	Cost of new toll for workers and businesses in the CBD that rely on vehicles	Manhattan CBD	Narrative	No adverse effects to any particular industry or occupational category in the Manhattan CBD. Given the high level of transit access in the CBD and high percentage of transit share, the toll would affect only a small percentage of the overall workforce. This would not adversely affect operations of businesses in the Manhattan CBD or the viability of any business types, including the taxi/FHV industry.							No	No mitigation needed. No adverse effects  <i>[New in Final EA - Enhancements]</i> <b>The Project Sponsors commit to establishing a Small Business Working Group (SBWG) that will meet 6 months prior and 6 months after Project implementation, and annually thereafter, to solicit ongoing input on whether and how businesses are being affected.</b>  <b>As part of mitigation for other topics, TBTA will ensure the overnight toll for trucks and other vehicles is reduced to at or below 50 percent of the peak toll from at least 12:00 a.m. to 4:00 a.m. in the final CBD toll structure; this will also benefit some workers and businesses.]</b>
	Price of Goods	Cost of new toll would not result in changes in the cost of most consumer goods	Manhattan CBD	Narrative	Unlikely to result in meaningful change in cost for most consumer goods. Any cost increase associated with the new toll in the CBD Tolling Alternative that would be passed along to receiving businesses would be distributed among several customers per toll charge (since trucks make multiple deliveries) especially for businesses, including small businesses and micro-businesses, receiving smaller deliveries. This would minimize the cost to any individual business. Some commodity sectors (construction materials, electronics, beverages) are more prone to increases due to less competition within delivery market.							No	No mitigation needed. No adverse effects
	Taxi and FHV Industry	Depending on the tolling scenario, the toll could reduce taxi and FHV revenues due to a reduction in taxi/FHV VMT with passengers within the CBD. While this could adversely affect individual drivers (see “Environmental Justice” below), the industry would remain viable overall.	28-county study area	Net change in daily taxi/FHV VMT regionwide Net change in daily taxi/FHV VMT in the CBD	-126,993 (-2.9%) -21,498 (-6.6%)	-14,028 (-0.3%) +15,020 (+4.6%)	-73,413 (-1.7%) -11,371 (-3.5%)	-217,477 (-5.0%) -54,476 (-16.8%)	-116,065 (-2.7%) -25,621 (-7.9%)	-4,888 (-1.0%) +4,962 (+1.5%)	-137,815 (-3.2%) -27,757 (-8.6%)	No	No mitigation needed. No adverse effects (see “Environmental Justice” below for mitigation related to effects on taxi and FHV drivers).
	Local Economic Effects	Changes in parking demand near the 60th Street CBD boundary	Area near 60th Street Manhattan CBD boundary	Narrative	Changes in parking demand near the 60th Street Manhattan CBD boundary (including increases just north of 60th Street and decreases just to the south) could jeopardize the viability of one or more parking facilities in the area south of 60th Street but would not create a climate of disinvestment that could lead to adverse effects on neighborhood character.							No	No mitigation needed. No adverse effects
7 – Parks and Recreational Resources		New tolling infrastructure, tolling system equipment, and signage in the southern portion of Central Park	Manhattan CBD	Narrative	The Project would replace four existing streetlight poles at three detection locations in Central Park near 59th Street and on two adjacent sidewalks outside the park’s wall. These poles would be in the same locations as existing poles and would not reduce the amount of park space or affect the features and activities of the park. The Project would also place tolling infrastructure beneath the structure of the High Line, outside the park area atop the High Line structure. FHWA through the public involvement process is soliciting public input related to the Project’s effects on these parks (see Chapter 19, “Section 4(f) Evaluation”).							No	No mitigation needed. Refer to Chapter 7, “Parks and Recreational Resources,” for a listing of measures to avoid adverse effects to parks.
8 – Historic and Cultural Resources		New tolling infrastructure and tolling system equipment on or near historic properties	45 historic properties within the Project’s Area of Potential Effects (APE)	Narrative	Based on a review of the Project in accordance with Section 106 of the National Historic Preservation Act, FHWA has determined that the Project would have No Adverse Effect on historic properties and the State Historic Preservation Office has concurred.							No	No mitigation needed. Refer to Chapter 8, “Historic and Cultural Resources,” for a listing of measures to avoid adverse effects to historic properties.



EA CHAPTER / ENVIRONMENTAL CATEGORY	TOPIC	SUMMARY OF EFFECTS	LOCATION	DATA SHOWN IN TABLE	TOLLING SCENARIO						POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS	
					A	B	C	D	E	F			G
9 – Visual Resources		Changes in visual environment resulting from new tolling infrastructure and tolling system equipment	Area of visual effect	Narrative	Infrastructure and equipment would be similar in form to streetlight poles, sign poles, or similar structures already in use throughout New York City. Cameras included in the array of tolling system equipment would use infrared illumination at night to allow images of license plates to be collected without any need for visible light. The Project would have a neutral effect on viewer groups and no adverse effect on visual resources						No	No mitigation needed. No adverse effects	
10 – Air Quality		Increases or decreases in emissions related to truck traffic diversions ... Continued below...	Cross Bronx Expressway at Macombs Road, Bronx, NY	Increase or decrease in Annual Average Daily <i>[Traffic]</i> (AADT)	3,901	3,996	2,056	1,766	3,757	2,188	3,255	No	No mitigation needed. No adverse effects  Enhancements 1. Refer to the overall enhancement on monitoring at the end of this table.  2. <i>[TBTA will work with NYC DOHMH]</i> to expand the existing network of sensors to monitor priority locations and supplement a smaller number of real-time PM <sub>2.5</sub> monitors to provide insight into time-of-day patterns to determine whether the changes in air pollution can be attributed to changes in traffic occurring after implementation of the Project. <i>[The Project Sponsors will select the additional monitoring locations in consideration of air quality analysis in the EA and input from environmental justice stakeholders. NYS Department of Environmental Conservation (NYSDEC) and other agencies conducting monitoring will also be consulted prior to finalizing the monitoring approach.]</i> The Project Sponsors will monitor air quality prior to implementation (setting a baseline), and two years following implementation. Following the initial two-year post-implementation analysis period, <i>[and separate from ongoing air quality monitoring and reporting,]</i> the Project Sponsors will assess the magnitude and variability of changes in air quality to determine whether more monitoring <i>[sites are]</i> necessary. <i>[Data collected throughout the monitoring program will be made available publicly as data becomes available and analysis is completed. Data from the real-time monitors will be available online continuously from the start of pre-implementation monitoring.]</i>  3. MTA is currently transitioning its fleet to zero-emission buses, which will reduce air pollutants and improve air quality near bus depots and along bus routes. MTA is committed to prioritizing traditionally underserved communities and those impacted by poor air quality and climate change and has developed an approach that actively incorporates these priorities in the deployment phasing process of the transition. ... Continued below...
				Increase or decrease in daily number of trucks	509	704	170	510	378	536	50		
				Potential adverse air quality effects from truck diversions	No	No	No	No	No	No	No		
			I-95, Bergen County, NJ	Increase or decrease in AADT	9,843	11,459	7,980	5,003	7,078	5,842	12,506	No	
				Increase or decrease in daily number of trucks	801	955	729	631	696	637	-236		
				Potential adverse air quality effects from truck diversions	No	No	No	No	No	No	No		
			RFK Bridge, NY	Increase or decrease in AADT	18,742	19,440	19,860	19,932	20,465	20,391	21,006	No	
				Increase or decrease in daily number of trucks	2,257	2,423	2,820	3,479	4,116	3,045	432		



EA CHAPTER / ENVIRONMENTAL CATEGORY	TOPIC	SUMMARY OF EFFECTS	LOCATION	DATA SHOWN IN TABLE	TOLLING SCENARIO							POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
					A	B	C	D	E	F	G		
10 – Air Quality (Cont'd)		Increases or decreases in emissions related to truck traffic diversions (Cont'd)	RFK Bridge, NY (Cont'd)	Potential adverse air quality effects from truck diversions	No	No	No	No	No	No	No	No	Based on feedback received during the outreach conducted for the Project and concerns raised by members of environmental justice communities, TBTA coordinated with MTA NYCT, which is committed to prioritizing the Kingsbridge Depot and Gun Hill Depot, both located in and serving primarily environmental justice communities in Upper Manhattan and the Bronx, when electric buses are received in MTA's next major procurement of battery electric buses, which <b>[began]</b> in <b>[late]</b> 2022. This independent effort by MTA NYCT is anticipated to provide air quality benefits to the environmental justice communities in the Bronx.
11 – Energy		Reductions in regional energy consumption	28-county study area	Narrative	Reductions in regional VMT would reduce energy consumption							No	<b>No mitigation needed.</b> Beneficial effects
12 – Noise		Imperceptible increases or decreases in noise levels resulting from changes in traffic volumes	Bridge and tunnel crossings	Narrative	The maximum noise level increases (2.9 dB(A)), which were predicted adjacent to the Queens-Midtown Tunnel in Tolling Scenario D, would not be perceptible.							No	<b>No mitigation needed.</b> No adverse effects
			Local streets	Narrative	Tolling Scenario C was used to assess noise level changes in Downtown Brooklyn, Tolling Scenario D was used at all other locations assessed. The maximum predicted noise level increases (2.5 dB(A)), which were at Trinity Place and Edgar Street, would not be perceptible. There was no predicted increase in noise levels in the Downtown Brooklyn locations.							No	<b>Enhancement</b> Refer to the overall enhancement on monitoring at the end of this table.
13 – Natural Resources		Construction activities to install tolling infrastructure near natural resources	Sites of tolling infrastructure and tolling system equipment	Narrative	No effects on surface waters, wetlands, or floodplains. Potential effects on stormwater and ecological resources will be managed through construction commitments. The Project is consistent with coastal zone policies.							No	Refer to <b>Chapter 13, “Natural Resources,”</b> for a listing of construction commitments to avoid, minimize, or mitigate potential negative effects.
14 – Hazardous Waste		Potential for disturbance of existing contaminated or hazardous materials during construction	Sites of tolling infrastructure and tolling system equipment	Narrative	Soil disturbance during construction and the potential alteration, removal, or disturbance of existing roadway infrastructure and utilities that could contain asbestos-containing materials, lead-based paint, or other hazardous substances. Potential effects will be managed through construction commitments.							No	Refer to <b>Chapter 14, “Asbestos-Containing Materials, Lead-Based Paint, Hazardous Wastes, and Contaminated Materials,”</b> for a listing of construction commitments to avoid, minimize, or mitigate potential negative effects.
15 – Construction Effects		Potential disruption related to construction for installation of tolling infrastructure	Sites of tolling infrastructure and tolling system equipment	Narrative	Temporary disruptions to traffic and pedestrian patterns, and noise from construction activities, with a duration of less than one year overall, and approximately two weeks at any given location. These effects will be managed through construction commitments.							No	Refer to <b>Chapter 15, “Construction Effects,”</b> for a listing of construction commitments to avoid, minimize, or mitigate potential negative effects.



EA CHAPTER / ENVIRONMENTAL CATEGORY	TOPIC	SUMMARY OF EFFECTS	LOCATION	DATA SHOWN IN TABLE	TOLLING SCENARIO							POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
					A	B	C	D	E	F	G		
17 – Environmental Justice	Low-income drivers	<p><i>[The EA as published in August 2022 found] the increased cost to drivers with the new CBD toll would disproportionately affect low-income drivers to the Manhattan CBD who do not have [a reasonable] alternative for reaching the Manhattan CBD. [With further analysis of the population affected and the addition of new mitigation, the Final EA concludes there would not be a disproportionately high and adverse effect on low-income drivers. ...Continued below...]</i></p>	28-county study area	Narrative	The increased cost to drivers would <b>[occur under]</b> all tolling scenarios.							Yes	<p><b>Mitigation needed.</b> The Project will include a tax credit for CBD tolls paid by residents of the Manhattan CBD whose New York adjusted gross income for the taxable year is less than \$60,000. TBTA will coordinate with the New York State Department of Taxation and Finance (NYS DTF) to ensure availability of documentation needed for drivers eligible for the NYS tax credit.</p> <p>TBTA will post information related to the tax credit on the Project website, with a link to the appropriate location on the NYS DTF website to guide eligible drivers to information on claiming the credit.</p> <p>TBTA will eliminate the \$10 refundable deposit currently required for E-ZPass customers who do not have a credit card linked to their account, and which is sometimes a barrier to access.</p> <p>TBTA will provide enhanced promotion of existing E-ZPass payment and plan options, including the ability for drivers to pay per trip (rather than a pre-load<b>[ed]</b> balance), refill their accounts with cash at participating retail locations, and discount plans already in place, about which they may not be aware.</p> <p>TBTA will coordinate with MTA to provide outreach and education on eligibility for existing discounted transit fare products and programs, including those for individuals 65 years of age and older, those with disabilities, and those with low incomes, about which many may not be aware.</p> <p>The Project Sponsors commit to establishing an Environmental Justice Community Group that <b>[will]</b> meet on a <b>[quarterly]</b> basis, with the first meeting <b>[taking place prior to]</b> Project implementation, to share updated data and analysis and hear about potential concerns. <b>[As it relates to environmental justice, the Project Sponsors will continue providing meaningful opportunities for participation and engagement by sharing updated data and analysis, listening to concerns, and seeking feedback on the toll setting process.] ...Continued below...</b></p>



EA CHAPTER / ENVIRONMENTAL CATEGORY	TOPIC	SUMMARY OF EFFECTS	LOCATION	DATA SHOWN IN TABLE	TOLLING SCENARIO							POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
					A	B	C	D	E	F	G		
17 – Environmental Justice (Cont'd)	Low-income drivers (Cont'd)	<i>[The EA as published in August 2022 found]</i> the increased cost to drivers with the new CBD toll would disproportionately affect low-income drivers to the Manhattan CBD who do not have <i>[a reasonable]</i> alternative for reaching the Manhattan CBD. <i>[With further analysis of the population affected and the addition of new mitigation, the Final EA concludes there would not be a disproportionately high and adverse effect on low-income drivers. (Cont'd).]</i>	28-county study area	Narrative	The increased cost to drivers with the new CBD toll would <i>[occur under]</i> all tolling scenarios (Cont'd).							Yes	<i>[New in Final EA – TBTA will ensure the overnight toll for trucks and other vehicles is reduced to at or below 50 percent of the peak toll from at least 12:00 a.m. to 4:00 a.m. in the final CBD toll structure; this will benefit low-income drivers who travel during that time.</i>  <i>New in the Final EA – For five years, TBTA commits to a Low-Income Discount Plan for low-income frequent drivers who will benefit from a 25 percent discount on the full CBD E-ZPass toll rate for the applicable time of day after the first 10 trips in each calendar month (not including the overnight period, which will already be deeply discounted).</i>  <i>Enhancement</i> <i>TBTA will coordinate with MTA NYCT to improve bus service in areas identified in the EA as the Brooklyn and Manhattan Bus Network Redesigns move forward.]</i>
	Taxi and FHV drivers	<i>[The EA as published in August 2022 found a]</i> potential disproportionately high and adverse effect would occur to taxi and FHV drivers in New York City, who largely identify as minority populations, in tolling scenarios that toll their vehicles more than once a day. This would occur in unmodified Tolling Scenarios A, D, and G; for FHV drivers, it would also occur in Tolling Scenarios C and E. The adverse effect would be related to the cost of the new CBD toll and the reduction of VMT for taxis and FHVs, which would result in a decrease in revenues that could lead to losses in employment. <i>[With the addition of new mitigation, the Final EA concludes there would not be a disproportionately high and adverse effect on taxi and FHV drivers.]</i>	New York City	Narrative	Potential adverse effect would occur in Tolling Scenarios A, D, and G, which would not have caps or exemptions for taxis and FHV drivers.							Yes	<i>[New in Final EA – Mitigation needed. TBTA will ensure that a toll structure with tolls of no more than once per day for taxis or FHVs is included in the final CBD toll structure.]</i>
				Change in daily taxi/FHV VMT with passengers in the CBD relative to No Action Alternative: Scenarios included in EA	-21,498 (-6.6%)	+15,020 (+4.6%)	-11,371 (-3.5%)	-54,476 (-16.8%)	-25,621 (-7.9%)	+4,962 (+1.5%)	-27,757 (-8.6%)		
				Net change in daily taxi/FHV trips to CBD relative to scenarios included in EA: Additional analysis to assess effects of caps or exemptions	Tolls capped at 1x / Day: +2%	—	—	Tolls capped at 1x / Day: +3% Exempt: +50%	—	—	Tolls capped at 1x / Day: +2%		



EA CHAPTER / ENVIRONMENTAL CATEGORY	TOPIC	SUMMARY OF EFFECTS	LOCATION	DATA SHOWN IN TABLE	TOLLING SCENARIO							POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
					A	B	C	D	E	F	G		
[17 – Environmental Justice (Cont'd)]	Increases or decreases in traffic, as a result of traffic diversions, in communities already overburdened by pre-existing air pollution and chronic diseases	Certain environmental justice communities would benefit from decreased traffic; some communities that are already overburdened by pre-existing air pollution and chronic diseases could see an adverse effect as a result of increased traffic.	The specific census tracts that would experience increased or decreased traffic change slightly depending on the tolling scenario. The following communities could have census tracts that merit place-based mitigation: High Bridge, Morrisania and Crotona, Tremont, Hunts Point, Mott Haven, Pelham, Throgs Neck, Northeast Bronx, East Harlem, Randall's Island, Lower East Side/Lower Manhattan, Downtown Brooklyn, Fort Greene, South Williamsburg, Orange, East Orange, Newark, and Fort Lee. (See Note 1.)	Narrative	Census tracts with pre-existing air pollutant and chronic disease burdens that would benefit from reduced traffic, and those affected by increased traffic would vary somewhat, but the identified communities remain largely the same across tolling scenarios. Under Tolling Scenario G, Fort Lee would not experience increases.							Yes	<p><b>New in Final EA – Mitigation needed.</b></p> <p><b>Regional Mitigation</b></p> <p>TBTA will ensure the overnight toll for trucks and other vehicles is reduced to at or below 50 percent of the peak toll from at least 12:00 a.m. to 4:00 a.m. in the final toll structure; this will reduce truck diversions.</p> <p>NYCDOT will expand the NYC Clean Trucks Program to accelerate the replacement of eligible diesel trucks, which travel on highways in certain environmental justice communities where the Project is projected to increase truck traffic, to lower-emission electric, hybrid, compressed natural gas, and clean diesel vehicles.</p> <p>NYCDOT will expand its off-hours delivery program in locations where the Project is projected to increase truck diversions to reduce daytime truck traffic and increase roadway safety in certain environmental justice communities.</p> <p><b>Place-based Mitigation</b></p> <p>TBTA will toll vehicles traveling northbound on the FDR Drive that exit at East Houston Street and then turn to immediately travel south on FDR Drive; this will mitigate modeled non-truck traffic increases on the FDR Drive between the Brooklyn Bridge and East Houston Street.</p> <p>NYCDOT will coordinate to replace diesel-burning TRUs at Hunts Point with cleaner vehicles.</p> <p>NYSDOT will coordinate to expand electric truck charging infrastructure.</p> <p>The Project Sponsors will coordinate to install roadside vegetation to improve near-road air quality.</p> <p>The Project Sponsors will renovate parks and greenspaces.</p> <p>The Project Sponsors will install or upgrade air filtration units in schools.</p> <p>The Project Sponsors will coordinate to expand existing asthma case management programs and create new community-based asthma programming through a neighborhood asthma center in the Bronx.]</p>

**OVERALL PROJECT ENHANCEMENT.** The Project Sponsors commit to ongoing monitoring and reporting of potential effects of the Project, including for example, traffic entering the CBD, vehicle-miles traveled in the CBD; transit ridership from providers across the region; bus speeds within the CBD; air quality and emissions trends; parking; and Project revenue. Data will be collected in advance and after implementation of the Project. A formal report on the effects of the Project will be issued one year after implementation and then every two years. In addition, a reporting website will make data, analysis, and visualizations available in open data format to the greatest extent *[practicable]*. Updates will be provided on at least a bi-annual basis as data becomes available and analysis is completed. *[This data will also be used to support an adaptive management approach to monitoring the efficacy of mitigation, and adjustments as warranted.]*

[Note:  
1 The Project Sponsors have committed to a toll policy that will reduce the overnight toll rate from at least 12:00 a.m. to 4:00 a.m. Based on the modeling undertaken for the tolling scenarios analyzed in the EA, it is expected that this policy will avoid a substantial portion of projected truck diversions, as many of these diverted trucks were projected to occur during the overnight hours. Following the adoption of the CBD tolling structure by the TBTA Board, which will include this overnight exemption/discount, modeling of the adopted tolling structure will be undertaken to determine where truck diversions are expected to occur. After the communities and census tracts are confirmed through the analysis of the adopted toll schedule, specific siting of place-based mitigation measures will require further coordination between the Project Sponsors, the Environmental Justice Community Group (representing the 10-county environmental justice study area), the relevant communities receiving the place-based mitigation, and relevant local and state implementing agencies.]



**[Table ES-6. Summary of the CBD Tolling Alternative Implementation Approach for Mitigation and Enhancement Measures]**

EA CHAPTER – TOPIC	RELEVANT LOCATION(S)	DESCRIPTION OF MITIGATION OR ENHANCEMENT	TIMELINE FOR PRE- AND POST-PROJECT IMPLEMENTATION DATA COLLECTION FOR SPECIFIC MEASURES	THRESHOLD FOR DETERMINING WHEN NEXT STEP(S) WILL BE IMPLEMENTED	TIMING FOR SPECIFIC MEASURES	LEAD AGENCY
<b>4B – Transportation: Highways and Local Intersections – Traffic-Highway Segments</b>	Three highway segments: <ul style="list-style-type: none"> <li>Westbound Long Island Expressway (I-495) near the Queens-Midtown Tunnel (midday)</li> <li>Approaches to westbound George Washington Bridge on I-95 (midday)</li> <li>Southbound and northbound FDR Drive between East 10th Street and Brooklyn Bridge (PM)</li> </ul>	<p>The Project Sponsors will implement a monitoring plan prior to implementation with post-implementation data collected approximately three months after the start of tolling operations and including thresholds for effects; if the thresholds are reached or crossed, the Project Sponsors will implement Transportation Demand Management (TDM) measures, such as ramp metering, motorist information, signage at all identified highway locations with adverse effects upon implementation of the Project. NYSDOT owns and maintains the relevant segments of the Long Island Expressway and I-95. The relevant segment of the FDR is owned by NYSDOT south of Montgomery Street and NYCDOT north of Montgomery Street. Implementation of TDM measures will be coordinated between the highway owners and the owners of any assets relevant to implementing the TDM.</p> <p>Post-implementation of TDM measures, the Project Sponsors will monitor effects and, if needed, TBTA will modify the toll rates, crossing credits, exemptions, and/or discounts within the parameters of the adopted toll schedule to reduce adverse effects.</p>	<p>Exact timing for data collection will be based on seasonality and other factors such as construction activity in accordance with NYCDOT's traffic count best practices. Modeling to quantify delay will be completed within 60 days of data collection.</p> <p>Baseline data will be collected within the six months prior to Project implementation. Post-implementation data will be collected approximately three months after the start of tolling operations.</p> <p>If TDM measures are implemented, additional data will be collected within six months after their implementation to determine whether they have addressed the adverse effect.</p>	<p>An increase in average weekday peak period delay of 2.5 minutes or more.</p> <p>The methods of data collection and evaluation will follow standard practices pursuant to guidelines of NYSDOT Highway Design Manual 5.2 and NYSDOT Data Services procedures.</p>	<p>The monitoring plan will be agreed to by the relevant lead and partnering agencies prior to a decision document being issued.</p> <p>TDM measures will be implemented over a period of two to eighteen months after confirming delays in excess of the threshold for next steps. More readily implementable measures (e.g., variable message signs) will be completed first. NYSDOT currently has two TDM projects progressing on the relevant segments of the LIE and the Cross Bronx (I-95) and TDM measures could be coordinated with these projects, as needed.</p> <p>Modifications to toll rates, crossing credits, exemptions, and/or discounts will be made after confirming delays in excess of the threshold for next steps persist following implementation of TDM measures, to allow for analysis of what the modifications should be and public outreach about any changes.</p>	NYSDOT will lead in partnership with TBTA and NYCDOT.
<b>4B – Transportation: Highways and Local Intersections – Intersections</b>	Four local intersections in Manhattan: <ul style="list-style-type: none"> <li>Trinity Place and Edgar Street (midday)</li> <li>East 36th Street and Second Avenue (midday)</li> <li>East 37th Street and Third Avenue (midday)</li> <li>East 125th Street and Second Avenue (AM, PM)</li> </ul>	NYCDOT will monitor those intersections where potential adverse effects were identified and implement appropriate signal timing adjustments to mitigate the effect, per NYCDOT's normal practice.	<p>Exact timing for data collection will be based on seasonality and other factors such as construction activity in accordance with NYCDOT's traffic count best practices. Modeling to quantify delay will be completed within 60 days of data collection.</p> <p>Baseline data will be collected within the six months prior to Project implementation.</p> <p>Post-implementation data will be collected within the six months after Project implementation.</p>	<p>For intersections at LOS E or F pre-implementation, an increase in average intersection delay of greater than five seconds.</p> <p>For intersections at LOS D or better pre-implementation, an increase of intersection delay of greater than five seconds at LOS to E or F.</p>	<p>Signal timing adjustments will be made within 90 days of confirming delays in excess of the threshold for next steps.</p>	NYCDOT will lead in partnership with TBTA.



EA CHAPTER – TOPIC	RELEVANT LOCATION(S)	DESCRIPTION OF MITIGATION OR ENHANCEMENT	TIMELINE FOR PRE- AND POST-PROJECT IMPLEMENTATION DATA COLLECTION FOR SPECIFIC MEASURES	THRESHOLD FOR DETERMINING WHEN NEXT STEP(S) WILL BE IMPLEMENTED	TIMING FOR SPECIFIC MEASURES	LEAD AGENCY
4C – Transportation: Transit - Transit Elements	Hoboken Terminal–PATH station (NJ) Stair 01/02	TBTA will coordinate with NJ TRANSIT and PANYNJ to monitor pedestrian volumes on Stair 01/02 one month prior to commencing tolling operations to establish a baseline, and two months after Project operations begin. If a comparison of Stair 01/02 passenger volumes before and after Project implementation shows an incremental change that is greater than or equal to 205, then TBTA will coordinate with NJ TRANSIT and PANYNJ to implement improved signage and wayfinding to divert some people from Stair 01/02, and supplemental personnel if needed.	For stair passenger volumes, baseline data will be collected one month prior to commencing tolling operations to establish a baseline, and two months after Project operations begin.  Station ridership data is collected and evaluated in an ongoing manner by NJ TRANSIT and PANYNJ.	For signage, if a comparison of Stair 01/02 peak-hour passenger volumes before and after Project implementation shows an incremental change that is greater than or equal to 205.  For supplemental personnel, if the threshold for signage has been reached but signage has not yet been installed, and overall ridership at Hoboken Terminal is 90 percent of 2019 levels 30 days prior to commencing tolling operations.	The monitoring plan will be agreed to by TBTA, PANYNJ, and NJ TRANSIT prior to a decision document being issued and MOU will be drafted thereafter.  The MOU will be executed within 120 days after toll rates are set.  Signage design will commence after the MOU is executed.  Signage fabrication and installation will begin immediately after observing passenger volumes in excess of the threshold for next steps.  Supplemental personnel, if needed, will be stationed within 45 days after observing passenger volumes in excess of the threshold for next steps.  Supplemental personnel will be used until signage is fabricated and installed.	TBTA will lead and coordinate with NJ TRANSIT and PANYNJ.
	42 St-Times Square subway station (Manhattan) Stair ML6/ML8 connecting mezzanine to uptown 1/2/3 lines subway platform	TBTA will coordinate with MTA NYCT to implement a monitoring plan for this location. The plan will identify a baseline, specific timing, and a threshold for additional action. If that threshold is reached, TBTA will coordinate with MTA NYCT to remove the center handrail and standardize the riser, so that the stair meets code without the hand rail. The threshold will be set to allow for sufficient time to implement the mitigation so that the adverse effect does not occur.	Exact timing will be based on seasonality and other factors such as service changes and construction activity in the station.  For stair passenger volumes, baseline data will be collected within the six months prior to Project implementation. Post-implementation data will be collected within the first year after Project implementation.  Station ridership data is collected and evaluated in an ongoing manner by MTA NYCT based on turnstile entry and exit data throughout the system.	If a comparison of Stair ML6/ML8 peak hour weekday passenger volumes before and after Project implementation shows an incremental change that is greater than or equal to 92 passengers in the weekday peak hour, and overall ridership at 42 St-Times Square subway station is 90 percent of 2019 levels.  The methods of data collection and evaluation will follow standard practices pursuant to guidelines of the <i>CEQR Technical Manual</i> and will be coordinated with NYCT.	Design and resource allocation will begin immediately after the passenger volume threshold is exceeded, and the hand rail will be removed prior to overall ridership at the station exceeding 90 percent of 2019 levels.	TBTA will lead in partnership MTA NYCT.
	Flushing-Main St subway station (Queens)–Escalator E456 connecting street to mezzanine level	TBTA will coordinate with MTA NYCT to implement a monitoring plan for this location. The plan will identify a baseline, specific timing, and a threshold for additional action. If that threshold is reached, MTA NYCT will increase the speed from 100 feet per minute (fpm) to 120 fpm.	Exact timing will be based on seasonality and other factors such as service changes and construction activity in the station.  For escalator passenger volumes, baseline data will be collected within the six months prior to Project implementation. Post-implementation data will be collected within the first year after Project implementation.	If a comparison of Escalator E456 peak hour weekday passenger volumes before and after Project implementation shows an incremental change that is greater than or equal to 26 passengers in the weekday peak hour, and overall ridership at Flushing-Main St subway station is 90 percent of 2019 levels.  The methods of data collection and evaluation will follow standard practices pursuant to guidelines of the <i>CEQR Technical Manual</i> and will be coordinated with NYCT.	Prior to overall ridership at the station exceeding 90 percent of 2019 levels.	TBTA will lead in partnership MTA NYCT.



EA CHAPTER – TOPIC	RELEVANT LOCATION(S)	DESCRIPTION OF MITIGATION OR ENHANCEMENT	TIMELINE FOR PRE- AND POST-PROJECT IMPLEMENTATION DATA COLLECTION FOR SPECIFIC MEASURES	THRESHOLD FOR DETERMINING WHEN NEXT STEP(S) WILL BE IMPLEMENTED	TIMING FOR SPECIFIC MEASURES	LEAD AGENCY
4C – Transportation: Transit - Transit Elements (Cont'd)	Union Sq subway station (Manhattan)–Escalator E219 connecting the L subway line platform to the Nos. 4/5/6 line mezzanine	TBTA will coordinate with MTA NYCT to implement a monitoring plan for this location. The plan will identify a baseline, specific timing, and a threshold for additional action. If that threshold is reached, MTA NYCT will increase the escalator speed from 100 fpm to 120 fpm.	Exact timing will be based on seasonality and other factors such as service changes and construction activity in the station.  For escalator passenger volumes, baseline data will be collected within the six months prior to Project implementation. Post-implementation data will be collected within the first year after Project implementation.  Station ridership data is collected and evaluated in an ongoing manner by MTA NYCT based on turnstile entry and exit data throughout the system.	If a comparison of Escalator E219 peak hour weekday passenger volumes before and after Project implementation shows an incremental change that is greater than or equal to 21 passengers in the weekday peak hour, and overall ridership at Union Sq subway station is 90 percent of 2019 levels.  The methods of data collection and evaluation will follow standard practices pursuant to guidelines of the <i>CEQR Technical Manual</i> and will be coordinated with NYCT.	Prior to overall ridership at the station exceeding 90 percent of 2019 levels.	TBTA will lead in partnership MTA NYCT.
	Court Sq subway station (Queens)–Stair P2/P4 to Manhattan-bound No. 7 line	TBTA will coordinate with MTA NYCT to implement a monitoring plan for this location. The plan will identify a baseline, specific timing, and a threshold for additional action. If that threshold is reached, TBTA will coordinate with MTA NYCT to construct a new stair from the northern end of the No. 7 platform to the street. The threshold will be set to allow for sufficient time to implement the mitigation so that the adverse effect does not occur.	Exact timing will be based on seasonality and other factors such as service changes and construction activity in the station.  For stair passenger volumes, baseline data will be collected within the six months prior to Project implementation. Post-implementation data will be collected within the first year after Project implementation.  Station ridership data is collected and evaluated in an ongoing manner by MTA NYCT based on turnstile entry and exit data throughout the system.	If a comparison of Stair P2/P4 peak hour weekday passenger volumes before and after Project implementation shows an incremental change that is greater than or equal to 101 passengers in the weekday peak hour, and overall ridership at Court Sq subway station is 90 percent of 2019 levels, and if construction by an outside developer is not likely in the foreseeable future.  The methods of data collection and evaluation will follow standard practices pursuant to guidelines of the <i>CEQR Technical Manual</i> and will be coordinated with NYCT.	Design and resource allocation will begin immediately after the passenger volume threshold is exceeded and will be implemented prior to overall ridership at the station exceeding 90 percent of 2019 levels (if construction by an outside developer is not likely in the foreseeable future).	TBTA will lead in partnership MTA NYCT.
4E – Transportation: Pedestrians and Bicycles - Pedestrian Circulation	Herald Square/Penn Station NY	NYCDOT will implement a monitoring plan at this location. The plan will include a baseline, specific timing, and a threshold for additional action. If that threshold is reached, NYCDOT will increase pedestrian space on sidewalks and crosswalks via physical widening and/or removing or relocating obstructions.	Exact timing will be based on seasonality and other factors such as construction activity.  Baseline data will be collected within the six months prior to Project implementation.  Post-implementation data will be collected within the first year after Project implementation.	An additional 221 pedestrians per hour (pph) during the weekday AM peak hour or 204 pph during the PM peak hour along the west sidewalk of Eighth Avenue between West 34th and West 35th Streets, 265 pph during the AM peak hour or 259 pph during the PM peak hour on the north crosswalk at Sixth Avenue and West 34th Street, and/or 221 pph during the AM peak hour on the north crosswalk at Seventh Avenue and West 32nd Street.  The methods of data collection and evaluation will follow standard practices pursuant to guidelines of the <i>CEQR Technical Manual</i> and will be coordinated with NYCDOT.	Within 90 days of observing pedestrian counts in excess of the threshold for next steps.	NYCDOT will lead.



EA CHAPTER – TOPIC	RELEVANT LOCATION(S)	DESCRIPTION OF MITIGATION OR ENHANCEMENT	TIMELINE FOR PRE- AND POST-PROJECT IMPLEMENTATION DATA COLLECTION FOR SPECIFIC MEASURES	THRESHOLD FOR DETERMINING WHEN NEXT STEP(S) WILL BE IMPLEMENTED	TIMING FOR SPECIFIC MEASURES	LEAD AGENCY
<b>6 – Economic Conditions -</b> Economic Effects of Toll Costs	Manhattan CBD	<b>New in Final EA:</b> The Project Sponsors commit to establishing a Small Business Working Group (SBWG) that will meet six months prior and six months after Project implementation, and annually thereafter, to solicit ongoing input on whether and how businesses are being affected.	N/A – No early monitoring required; implemented under any adopted tolling structure.	N/A – No threshold required; implemented under any adopted tolling structure.	Membership will be confirmed six months prior to Project implementation, with the first meeting taking place prior to implementation, the second meeting within the six months after implementation, and meetings annually thereafter.	TBTA will lead, in partnership with NYSDOT and NYCDOT.
	Multiple throughout the study area	<b>New in Final EA:</b> TBTA will ensure the overnight toll for trucks and other vehicles is reduced to at or below 50 percent of the peak toll from at least 12:00 a.m. to 4:00 a.m. in the final structure; this will also benefit some workers and businesses.	N/A – No early monitoring required; implemented under any adopted tolling structure.	N/A – No threshold required; implemented under any adopted tolling structure.	Concurrent with Project Implementation.	TBTA will lead.
<b>7 – Parks and Recreational Resources</b>	Manhattan CBD	Refer to <b>Chapter 7, “Parks and Recreational Resources,”</b> for a listing of measures to avoid adverse effects to parks.	N/A – No early monitoring required; implemented under any adopted tolling structure.	N/A – No threshold required; implemented under any adopted tolling structure.	Will occur during design, development, testing and/or construction as per contract.	TBTA will ensure contractors comply with contract requirements.
<b>8 – Historic and Cultural Resources</b>	45 historic properties within the Project’s Area of Potential Effects (APE)	Refer to <b>Chapter 8, “Historic and Cultural Resources,”</b> for a listing of measures to avoid adverse effects to historic properties.	N/A – No early monitoring required; implemented under any adopted tolling structure.	N/A – No threshold required; implemented under any adopted tolling structure.	Will occur during design, development, testing and/or construction as per contract.	TBTA will ensure contractors comply with contract requirements.
<b>10 – Air Quality</b>	New York City	TBTA will coordinate with NYC DOHMH to expand the City’s existing network of sensors to monitor priority locations, and supplement a smaller number of real-time PM <sub>2.5</sub> monitors to provide insight into time-of-day patterns to determine whether the changes in air pollution can be attributed to changes in traffic occurring after implementation of the Project. The Project Sponsors will select the additional monitoring locations in consideration of air quality analysis in the EA and input from environmental justice stakeholders. NYSDEC and other agencies conducting monitoring will also be consulted prior to finalizing the monitoring approach. The Project Sponsors will monitor air quality prior to implementation (setting a baseline), and two years following implementation. Following the initial two-year post-implementation analysis period, and separate from ongoing air quality monitoring and reporting, the Project Sponsors will assess the magnitude and variability of changes in air quality to determine whether more monitoring sites are necessary. Data collected throughout the monitoring program will be made available publicly as data becomes available and analysis is completed. Data from the real-time monitors will be available online continuously from the start of pre-implementation monitoring.	In the year prior to Project implementation (setting a baseline), and two years following Project implementation.  Locations and durations will be determined in consideration of land uses and non-Project sources of emissions and with input from environmental justice stakeholders.	N/A – No threshold required; implemented under any adopted tolling structure.	Allocation of resources and approval of work plan is underway. Baseline data will be collected in the year prior to Project implementation, but the exact start and duration will be dependent on timing for Project implementation. The monitoring locations will be confirmed at least four months prior to data collection. No less than six months of data will be collected prior to Project implementation.	TBTA will lead in partnership with NYC DOHMH and NYSDEC.



EA CHAPTER – TOPIC	RELEVANT LOCATION(S)	DESCRIPTION OF MITIGATION OR ENHANCEMENT	TIMELINE FOR PRE- AND POST-PROJECT IMPLEMENTATION DATA COLLECTION FOR SPECIFIC MEASURES	THRESHOLD FOR DETERMINING WHEN NEXT STEP(S) WILL BE IMPLEMENTED	TIMING FOR SPECIFIC MEASURES	LEAD AGENCY
10 – Air Quality (Cont'd)	Upper Manhattan and the Bronx	MTA is currently transitioning its fleet to zero-emission buses, which will reduce air pollutants and improve air quality near bus depots and along bus routes. MTA is committed to prioritizing traditionally underserved communities and those impacted by poor air quality and climate change and has developed an approach that actively incorporates these priorities in the deployment phasing process of the transition. Based on feedback received during the outreach conducted for the Project and concerns raised by members of environmental justice communities, TBTA coordinated with MTA NYCT, which is committed to prioritizing the Kingsbridge Depot and Gun Hill Depot, both located in and serving primarily environmental justice communities in Upper Manhattan and the Bronx, when electric buses are received in MTA's next major procurement of battery electric buses, which began in late 2022. This independent effort by MTA NYCT is anticipated to provide air quality benefits to the environmental justice communities in the Bronx.	Data on the number and location of MTA's battery electric buses is collected in an ongoing manner.	N/A – No threshold required; implemented under any adopted tolling structure.	Prioritization is complete. Timeline for receipt of buses is the first quarter of 2025.	TBTA will lead in partnership MTA NYCT.
13 – Natural Resources	Sites of tolling infrastructure and tolling system equipment	Refer to <b>Chapter 13, “Natural Resources,”</b> for a listing of construction commitments to avoid, minimize, or mitigate potential negative effects.	N/A – No early monitoring required; implemented under any adopted tolling structure.	N/A – No threshold required; implemented under any adopted tolling structure.	Will occur during design, development, testing and/or construction as per contract.	TBTA will ensure contractors comply with contract requirements.
14 – Hazardous Waste	Sites of tolling infrastructure and tolling system equipment	Refer to <b>Chapter 14, “Asbestos-Containing Materials, Lead-Based Paint, Hazardous Wastes, and Contaminated Materials,”</b> for a listing of construction commitments to avoid, minimize, or mitigate potential negative effects.	N/A – No early monitoring required; implemented under any adopted tolling structure.	N/A – No threshold required; implemented under any adopted tolling structure.	Will occur during design, development, testing and/or construction as per contract.	TBTA will ensure contractors comply with contract requirements.
15 – Construction Effects	Sites of tolling infrastructure and tolling system equipment	Refer to <b>Chapter 15, “Construction Effects,”</b> for a listing of construction commitments to avoid, minimize, or mitigate potential negative effects.	N/A – No early monitoring required; implemented under any adopted tolling structure.	N/A – No threshold required; implemented under any adopted tolling structure.	Will occur during design, development, testing and/or construction as per contract.	TBTA will ensure contractors comply with contract requirements.
17 – Environmental Justice - Low-income drivers	28-county study area	The Project will include a tax credit for CBD tolls paid by residents of the Manhattan CBD whose New York adjusted gross income for the taxable year is less than \$60,000. TBTA will coordinate with the New York State Department of Taxation and Finance (NYS DTF) to ensure availability of documentation needed for drivers eligible for the NYS tax credit.	N/A – No early monitoring required; implemented under any adopted tolling structure. Data on the utilization of tax credits for CBD tolls paid will be collected by NYS DTF.	N/A – No threshold required; implemented under any adopted tolling structure.	Coordination with NYS DTF will begin immediately after Project approval, if approved.	TBTA will lead and coordinate with the NYS DTF.
		TBTA will post information related to the tax credit on the Project website, with a link to the appropriate location on the NYS DTF website to guide eligible drivers to information on claiming the credit.	N/A – No early monitoring required; implemented under any adopted tolling structure.	N/A – No threshold required; implemented under any adopted tolling structure.	Information will be made available to the public about the tax credit during the public information campaigns at least 60 days prior to Project implementation. Information will be provided through a combination of methods which may include print publications, radio, billboards, websites, social media, and existing MTA assets such as digital subway station signs and bus advertising. Information will be provided in multiple languages and targeted geographically.	TBTA will lead and coordinate with the NYS DTF.



EA CHAPTER – TOPIC	RELEVANT LOCATION(S)	DESCRIPTION OF MITIGATION OR ENHANCEMENT	TIMELINE FOR PRE- AND POST-PROJECT IMPLEMENTATION DATA COLLECTION FOR SPECIFIC MEASURES	THRESHOLD FOR DETERMINING WHEN NEXT STEP(S) WILL BE IMPLEMENTED	TIMING FOR SPECIFIC MEASURES	LEAD AGENCY
<b>17 – Environmental Justice -</b> Low-income drivers (Cont'd)	28-county study area (Cont'd)	TBTA will eliminate the \$10 refundable deposit currently required for E-ZPass customers who do not have a credit card linked to their account, and which is sometimes a barrier to access.	N/A – No early monitoring required; implemented under any adopted tolling structure.	N/A – No threshold required; implemented under any adopted tolling structure.	60 days prior to Project implementation.	TBTA will lead.
		TBTA will provide enhanced promotion of existing E-ZPass payment and plan options, including the ability for drivers to pay per trip (rather than a pre-loaded balance), refill their accounts with cash at participating retail locations, and discount plans already in place, about which they may not be aware.	N/A – No early monitoring required; implemented under any adopted tolling structure. Information on the scope and reach of promotion efforts will be documented, and data on E-ZPass account type and volume is collected in an ongoing manner.	N/A – No threshold required; implemented under any adopted tolling structure.	Promotion will be part of the public information campaigns at least 60 days prior to Project implementation.	TBTA will lead.
		TBTA will coordinate with MTA to provide outreach and education on eligibility for existing discounted transit fare products and programs, including those for individuals 65 years of age and older, those with disabilities, and those with low incomes, about which many may not be aware.	N/A – No early monitoring required; implemented under any adopted tolling structure. Information on the scope and reach of outreach efforts will be documented.	N/A – No threshold required; implemented under any adopted tolling structure.	Outreach will be part of the public information campaigns at least 60 days prior to Project implementation.	TBTA will lead in partnership with MTA.
		The Project Sponsors commit to establishing an Environmental Justice Community Group that will meet on a quarterly basis, with the first meeting taking place prior to Project implementation. As it relates to environmental justice, the Project Sponsors will continue providing meaningful opportunities for participation and engagement by sharing updated data and analysis, listening to concerns and seeking feedback on the toll setting process.	N/A – No early monitoring required; implemented under any adopted tolling structure.	N/A – No threshold required; implemented under any adopted tolling structure.	Membership will be confirmed six months prior to Project implementation, with the first meeting taking place prior to implementation, the second meeting within the six months after implementation, and meetings quarterly thereafter.	TBTA will lead, in partnership with NYSDOT and NYCDOT.
		<b>New in Final EA:</b> TBTA will ensure the overnight toll for trucks and other vehicles is reduced to at or below 50 percent of the peak toll from at least 12:00 a.m. to 4:00 a.m. in the final CBD toll structure; this will benefit low-income drivers who travel during that time.	N/A – No early monitoring required; implemented under any adopted tolling structure.	N/A – No threshold required; implemented under any adopted tolling structure.	Concurrent with Project implementation.	TBTA will lead.
		<b>New in Final EA:</b> For five years, TBTA commits to a Low-Income Discount Plan for frequent low-income drivers who will benefit from a 25 percent discount on the full CBD E-ZPass toll rate for the applicable time of day after the first 10 trips in each calendar month (not including the overnight period, which will already be deeply discounted).	N/A – No early monitoring required; implemented under any adopted tolling structure; application process will begin several months in advance of the commencement of tolling operations.	N/A – No threshold required; implemented under any adopted tolling structure.	Concurrent with Project implementation.	TBTA will lead.
	New York City	TBTA will coordinate with MTA NYCT to improve bus service in areas identified in the EA as the Brooklyn and Manhattan Bus Network Redesigns move forward.	N/A – No early monitoring required; implemented under any adopted tolling structure.	N/A – No threshold required; implemented under any adopted tolling structure.	Coordination between TBTA and NYCT is ongoing and will increase after toll rates are set. The Brooklyn Bus Network Redesign Draft Plan was published in December 2022 and will be refined in 2023. The next step in the Manhattan Bus Network Redesign is an Existing Conditions Report.	TBTA will coordinate with NYCT.
<b>17 – Environmental Justice -</b> Taxi and FHV drivers	New York City	<b>New in Final EA:</b> TBTA will ensure that a toll structure with tolls of no more than once per day for taxis or FHVs is included in the final CBD toll structure.	N/A – No threshold required; implemented under any adopted tolling structure.	N/A – No threshold required; implemented under any adopted tolling structure.	Concurrent with Project implementation.	TBTA will lead.



EA CHAPTER – TOPIC	RELEVANT LOCATION(S)	DESCRIPTION OF MITIGATION OR ENHANCEMENT	TIMELINE FOR PRE- AND POST-PROJECT IMPLEMENTATION DATA COLLECTION FOR SPECIFIC MEASURES	THRESHOLD FOR DETERMINING WHEN NEXT STEP(S) WILL BE IMPLEMENTED	TIMING FOR SPECIFIC MEASURES	LEAD AGENCY
<b>17 – Environmental Justice –</b> Traffic diversion to certain communities already overburdened by pre-existing air pollution and chronic diseases (See Note 1)	Multiple throughout the environmental justice study area	<b>New in Final EA:</b> TBTA will ensure the overnight toll for trucks and other vehicles is reduced to at or below 50 percent of the peak toll from at least 12:00 a.m. to 4:00 a.m. in the final structure; this will reduce truck diversions.	N/A – No early monitoring required; implemented under any adopted tolling structure.	N/A – No threshold required; implemented under any adopted tolling structure.	Concurrent with Project implementation.	TBTA will lead.
		<b>New in Final EA:</b> NYCDOT will expand NYC Clean Trucks Program to accelerate the replacement of eligible old diesel trucks, which travel on highways in certain environmental justice communities where the Project is projected to increase truck traffic, to lower-emission electric, hybrid, compressed natural gas, and clean diesel vehicles.	N/A – No early monitoring required; implemented under any adopted tolling structure.	N/A – No threshold required; implemented under any adopted tolling structure.	Engagement with truck-owning companies will start after toll rates are set; implementation will begin within six months of start of tolling operations.	NYCDOT will lead.
		<b>New in Final EA:</b> NYCDOT will expand its off-hours deliveries program in locations where the Project is projected to increase truck traffic to reduce daytime truck traffic and increase roadway safety in certain environmental justice communities.	N/A – No early monitoring required; implemented under any adopted tolling structure.	N/A – No threshold required; implemented under any adopted tolling structure.	Engagement with shippers and receivers will start after the toll rates are set; implementation will begin within six months of start of tolling operations.	NYCDOT will lead.
	FDR Drive between the Brooklyn Bridge and East Houston Street	<b>New in Final EA:</b> TBTA will toll vehicles traveling northbound on the FDR Drive that exit at East Houston Street and then turn to immediately travel south on FDR Drive; this will mitigate modeled non-truck traffic increases on the FDR Drive between the Brooklyn Bridge and East Houston Street.	N/A – No early monitoring required; implemented under any adopted tolling structure.	N/A – No threshold required; implemented under any adopted tolling structure.	Concurrent with Project implementation.	TBTA will lead.
	Hunts Point Produce Market	<b>New in Final EA:</b> The Project Sponsors will coordinate to replace diesel-burning TRUs with cleaner vehicles at the Hunts Point Produce Market.	N/A – No early monitoring required; implemented under any adopted tolling structure.	N/A – No threshold required; implemented under any adopted tolling structure.	Engagement with TRU owners and lessees for TRU replacement will start immediately after receiving Project approval.	NYCDOT will lead.
	The specific census tracts that would experience increased or decreased truck traffic change slightly depending on the tolling scenario. The following communities could have census tracts that merit place-based mitigation: High Bridge, Morrisania and Crotona, Tremont, Hunts Point, Mott Haven, Pelham, Throgs Neck, Northeast Bronx, East Harlem, Randall's Island, Downtown Brooklyn, Fort Greene, South Williamsburg, Orange, East Orange, Newark, and Fort Lee. (See Note 2).	<b>New in Final EA:</b> NYSDOT will coordinate to expand electric truck charging infrastructure.	After toll rates are set, analyses of the adopted toll structure will be undertaken as outlined in <b>Appendix 17D</b> to determine where truck diversions are expected to occur. With this analysis and through continued engagement with the Environmental Justice Community Group and other stakeholders, specific locations for place-based mitigation will be determined. Data on the scope and impact of mitigation measures implemented will be collected in an ongoing manner.	N/A – No threshold required; implemented under any adopted tolling structure.	Specific locations will be determined after toll rates are set; implementation will begin within six months of start of tolling operations.	NYSDOT will lead.
		<b>New in Final EA:</b> The Project Sponsors will coordinate to install roadside vegetation to improve near-road air quality.			Specific locations will be determined with the affected communities after toll rates are set; implementation will begin within six months of start of tolling operations.	The Project Sponsors will coordinate with relevant state and local agencies.
		<b>New in Final EA:</b> The Project Sponsors will renovate parks and greenspaces.			Specific locations will be determined with the affected communities after toll rates are set; implementation timing will be determined after locations are confirmed.	The Project Sponsors will coordinate with relevant local agencies.
		<b>New in Final EA:</b> The Project Sponsors will install or upgrade air filtration units in schools.			After the toll rates are set, a site/needs assessment will take place prior to start of tolling operations; implementation timing will be determined after locations are confirmed.	The Project Sponsors will coordinate with relevant local agencies.
		<b>New in Final EA:</b> The Project Sponsors will work with NYC DOHMH to expand their asthma case management program and create new community-based asthma programming through a neighborhood asthma center in the Bronx.			After the toll rates are set, a site/needs assessment will take place prior to start of tolling operations; implementation timing will be determined after locations are confirmed.	The Project Sponsors will coordinate with NYC DOHMH.



EA CHAPTER – TOPIC	RELEVANT LOCATION(S)	DESCRIPTION OF MITIGATION OR ENHANCEMENT	TIMELINE FOR PRE- AND POST-PROJECT IMPLEMENTATION DATA COLLECTION FOR SPECIFIC MEASURES	THRESHOLD FOR DETERMINING WHEN NEXT STEP(S) WILL BE IMPLEMENTED	TIMING FOR SPECIFIC MEASURES	LEAD AGENCY
Overall Project Enhancement	Manhattan CBD and locations of potential Project effects	The Project Sponsors commit to ongoing monitoring and reporting of potential effects of the Project, including for example, traffic entering the CBD, vehicle-miles traveled in the CBD; transit ridership from providers across the region; bus speeds within the CBD; air quality and emissions trends; parking; and Project revenue. Data will be collected in advance and after implementation of the Project. A formal report on the effects of the Project will be issued one year after implementation and then every two years. In addition, a reporting website will make data, analysis, and visualizations available in open data format to the greatest extent practicable. Updates will be provided on at least a bi-annual basis as data becomes available and analysis is completed. This data will also be used to support an adaptive management approach to monitoring the efficacy of mitigation, and adjustments as warranted.	Baseline data gathering began in 2019 and will continue through Project implementation as data from external sources becomes available (with some data sets published only annually or quarterly) and data analysis is completed.  After Project implementation, these data sets will continue to be collected as they become available and new data sets, such as Project revenue, will start being collected.	N/A – No threshold required; implemented under any adopted tolling structure.	The reporting website will begin reporting baseline data and post-implementation data from the tolling system as soon as practicable, after Project implementation.  A formal report on the effects of the Project will be issued one year after implementation and then every two years. In addition, the reporting website will make data, analysis, and visualizations available in open data format to the greatest extent practicable. Updates will be provided on at least a bi-annual basis as data becomes available and analysis is completed. This data will also be used to support an adaptive management approach to monitoring the efficacy of mitigation, and adjustments as warranted.	TBTA will lead in partnership with NYCDOT, NYSDOT, with coordination with other agencies and entities for data as appropriate.

- Notes:
- 1 To fund the mitigation measures for this topic the Project Sponsors have committed \$155 million over five years. The Project Sponsors commit to these measures, regardless of the tolling structure eventually adopted. The allocation of funding is described in greater detail in **Chapter 17, “Environmental Justice.”** An additional \$5 million has been allocated for mitigation and enhancement measures related to monitoring across other topics, along with \$47.5 million for the low-income toll discount.
  - 2 The Project Sponsors have committed to a toll policy that will reduce the overnight toll rate from at least 12:00 a.m. to 4:00 a.m. Based on the modeling undertaken for the tolling scenarios analyzed in the EA, it is expected that this policy will avoid a substantial portion of projected truck diversions, as many of these diverted trucks were projected to occur during the overnight hours. Following the adoption of the CBD tolling structure by the TBTA Board, which will include this overnight exemption/discount, modeling of the adopted tolling structure will be undertaken to determine where truck diversions are expected to occur. Following this analysis, specific siting of place-based mitigation measures will require further coordination between the Project Sponsors, the Environmental Justice Community Group (representing the 10-county environmental justice study area), the relevant communities receiving the place-based mitigation, and relevant local and state implementing agencies.



## WHAT ARE THE PROJECT'S EFFECTS TO SECTION 4(f) PROPERTIES?

Section 4(f) of the U.S. Department of Transportation Act of 1966 (now 49 USC Section 303 and 23 USC Section 138) prohibits USDOT agencies, including FHWA, from approving any program or project that requires the “use” of any publicly owned parkland, recreation area, or wildlife and waterfowl refuge; or any land from a publicly or privately owned historic site of national, state, or local significance (collectively, Section 4(f) resources), unless: (1) there is no feasible and prudent avoidance alternative to the use of the land, and the action includes all possible planning to minimize harm to the Section 4(f) resource; or (2) the agency determines that the use of the property will have a *de minimis* impact.

A project uses a Section 4(f) property if it:

- Permanently incorporates land from the Section 4(f) property into a transportation facility;
- Temporarily occupies land that is part of a Section 4(f) property, such as during construction; or
- Results in a “constructive” use of the Section 4(f) property, where there is no permanent incorporation or temporary occupancy of land, but the proximity impacts (e.g., visual and noise) of a project are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired.

A *de minimis* impact involves the use of Section 4(f) property that is generally minor in nature and results in no adverse effect to a historic site and no adverse effect to the activities, features, or attributes qualifying a park, recreation area, or refuge for protection under Section 4(f).

FHWA evaluated the Project's potential effects on Section 4(f) properties and determined that the CBD Tolling Alternative would not result in any use of Section 4(f) properties other than Central Park and the High Line for the following reasons:

- Central Park: Tolling system equipment is proposed on four poles at three detection locations on park roadways just inside the park near 59th Street. The equipment would be mounted on poles, replacing existing poles in the same locations and would prevent authorized vehicles from using the park to enter the Manhattan CBD without paying the toll. Because the Project Sponsors must have continued access to the poles for maintenance, FHWA intends to make a finding that the CBD Tolling Alternative would result in a *de minimis* impact on Central Park.
- High Line: The CBD Tolling Alternative would attach tolling system equipment to the High Line, a former railroad viaduct that now has a linear park on the former trackbed.<sup>33</sup> The tolling system equipment would be mounted beneath the trackbed structure on a metal pipe, bolted to the existing girders of the viaduct. No tolling infrastructure or tolling system equipment would be within or visible from the publicly accessible parkland that is atop the High Line. Because the Project Sponsors require permanent access to the tolling equipment attached to the underside of the High Line, FHWA intends to make a finding that the CBD Tolling Alternative would result in a *de minimis* impact on the High Line.

***[The EA as published in August 2022 described FHWA's proposed] finding that the CBD Tolling Alternative would result in a *de minimis* impact on Central Park and the High Line, and the officials with jurisdiction over these resources concurred with this finding and the New York State Historic Preservation Office has concurred with FHWA's determination that there would be no adverse effect on Central Park as a historic property. [The EA as published in August 2022 also described FHWA's proposed finding that the temporary occupancy of Central Park for construction of the CBD Tolling Alternative would not impair the protected activities, features, or attributes that qualify Central Park for protection under Section 4(f), and***

**therefore, the temporary occupancy of Central Park is not a use of this Section 4(f) property.**

**[Following consideration of public input received during the public comment period, FHWA has concluded the CBD Tolling Alternative would not affect the activities, features, and attributes that qualify the High Line for protection under Section 4(f), and the CBD Tolling Alternative would have a de minimis impact on Central Park.]**

Chapter 19, “Section 4(f) Evaluation,” provides further detail and support of this finding.

## ENDNOTES

- <sup>1</sup> U.S. Census Bureau. American Community Survey, 2015-2019; U.S. Census Bureau, 2012–2016 Census Transportation Planning Package.
- <sup>2</sup> U.S. Census Bureau, 2012–2016 Census Transportation Planning Package; New York State Comptroller. 2017. New York City’s Office Market report; U.S. Census Bureau. American Community Survey, 2015 to 2019.
- <sup>3</sup> American Public Transportation Association. 2021 *Public Transportation Fact Book*, Table 10. <https://www.apta.com/wp-content/uploads/APTA-2021-Fact-Book.pdf>
- <sup>4</sup> As of July 1, 2021, the estimated population of Los Angeles was 3,849,297. U.S. Census Bureau. Quickfacts. <https://www.census.gov/quickfacts/fact/table/losangelescitycalifornia,losangelescountycalifornia,CA/PST045221>.
- <sup>5</sup> New York Metropolitan Transportation Council. January 2021. *Hub Bound Travel Data Report 2019*. Transit includes subway, commuter rail, bus, ferry, and tram. NYMTC relies on passenger, vehicle, and bicycle counts to prepare the hub bound data, and these counts include work and non-work trips. Therefore, percentages of travel by mode vary from census data. [https://www.nymtc.org/Portals/0/Pdf/Hub%20Bound/2019%20Hub%20Bound/DM\\_TDS\\_Hub\\_Bound\\_Travel\\_2019.pdf?ver=GS5smEoyHSsHsyX\\_t\\_Zriw%3d%3d](https://www.nymtc.org/Portals/0/Pdf/Hub%20Bound/2019%20Hub%20Bound/DM_TDS_Hub_Bound_Travel_2019.pdf?ver=GS5smEoyHSsHsyX_t_Zriw%3d%3d).
- <sup>6</sup> **[U.S. Census Bureau, 2012–2016 Census Transportation Planning Package.]**
- <sup>7</sup> As defined by the MTA Reform and Traffic Mobility Act, the Manhattan CBD consists of the geographic area of Manhattan south of and inclusive of 60th Street to the extent practicable but does not include the Franklin D. Roosevelt (FDR) Drive and the West Side Highway/Route 9A, including the Battery Park Underpass and any surface roadway portion of the Hugh L. Carey Tunnel that connects to West Street (the West Side Highway/Route 9A).
- <sup>8</sup> Merriam-Webster, “How did ‘gridlock’ move so quickly?” <https://www.merriam-webster.com/words-at-play/the-history-of-gridlock>.
- <sup>9</sup> INRIX 2021 Global Traffic Scorecard. <https://inrix.com/scorecard-city/?city=New%20York%20City%20NY&index=5>.
- <sup>10</sup> MTA Subway and Bus Ridership for 2019. <https://new.mta.info/coronavirus/ridership>. Bus ridership reflects the total annual reported numbers for New York City Transit and MTA Bus Company.
- <sup>11</sup> American Public Transportation Association. 2021 *Public Transportation Fact Book*, Table 10. <https://www.apta.com/wp-content/uploads/APTA-2021-Fact-Book.pdf>; American Public Transit Association. “Public Transportation Ridership Report: Fourth Quarter 2021.” <https://www.apta.com/wp-content/uploads/2021-Q4-Ridership-APTA.pdf>.
- <sup>12</sup> Ernst & Young, LLP, *Economic impacts of the Metropolitan Transportation Authority’s 2020-2024 Capital Investment Strategy*. Prepared for The Partnership of New York City. March 2019. <https://pfny.org/wp-content/uploads/2020/01/MTA-Capital-Plan-2020-24-Econ-Impacts.pdf>.
- <sup>13</sup> MTA. October 1, 2019. *2020–2024 Capital Program: Executive Summary*. <https://new.mta.info/sites/default/files/2019-09/MTA%202020-2024%20Capital%20Program%20-%20Executive%20Summary.pdf>.
- <sup>14</sup> Ibid.
- <sup>15</sup> This reflects the portion of the capital program for transit improvements; it includes an additional \$254 million for other transit projects not identified here, as well as a December 2021 amendment that increased the transit- and rail-related portion of the program by \$535 million. The full capital program, including non-transit improvements, includes \$55.3 billion in projects.
- <sup>16</sup> MTA. October 1, 2019. *2020–2024 Capital Program: Executive Summary*. <https://new.mta.info/sites/default/files/2019-09/MTA%202020-2024%20Capital%20Program%20-%20Executive%20Summary.pdf>.
- <sup>17</sup> In April 2019, the legislature passed the MTA Reform and Traffic Mobility Act that authorized TBTA to design, develop, build and operate the Project. Among the provisions, the Act requires that a Traffic Mobility Review Board (TMRB) be established to make recommendations on the toll rates as well as to develop recommendations on crossing credits, exemptions, or discounts. Refer to **Appendix 2B, “Project Alternatives: MTA Reform and Traffic Mobility Act.”**

- 18 The travel demand modeling conducted for this EA and described in **Subchapter 4A, “Transportation: Regional Transportation Effects and Modeling,”** included the bicycle lanes as part of the No Action Alternative but not the existing condition.
- 19 Ibid.
- 20 New bicycle lanes and bus lanes were incorporated in the transportation modeling conducted for this EA and described in **Subchapter 4A, “Transportation: Regional Transportation Effects and Modeling,”** as appropriate.
- 21 *[As examples, a “frequent” driver could be someone regularly commuting to work or someone who regularly visits a facility for medical care.]*
- 22 *[The Project Sponsors commit to a five-year period for the discounted toll rate to allow time for frequent low-income drivers to try alternatives and/or adjust their travel habits as capital projects increase reliability and access.]*
- 23 *[Importantly, in many cases, once these customers have E-ZPass, they will also benefit from lower toll rates (compared to Tolls by Mail) on other facilities, including but not limited to the Port Authority of NY & NJ tunnels and bridges, TBTA’s bridges and tunnels, the New York State Bridge Authority bridges, and the New York State Thruway, thus reducing their overall toll expenditure.]*
- 24 *[This commitment would not preclude New York City taxi and FHV drivers from benefiting from the low-income driver mitigation measures, including the Low-Income Discount Plan for their vehicles that are not licensed as taxis or FHVs, provided that they can demonstrate eligibility.]*
- 25 [USEPA. 2014. “Near Roadway Air Pollution and Health: Frequently Asked Questions.” [US]EPA-420-F-14-044. August. <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100NFFD.PDF?Dockey=P100NFFD.PDF>. p. 1.; As defined by USEPA, air toxics, often referred to as hazardous air pollutants (HAPs), are pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects. [US]EPA regulates 187 chemicals under its HAP program (USEPA, 2009d). Most air toxics originate from transportation and industry, including motor vehicles, industrial facilities, and power plants. USEPA. EJSCREEN Environmental Justice Mapping and Screening Tool: EJSCREEN Technical Documentation. September 2019. [https://www.epa.gov/sites/default/files/2021-04/documents/ejscreen\\_technical\\_document.pdf](https://www.epa.gov/sites/default/files/2021-04/documents/ejscreen_technical_document.pdf).]
- 26 [USEPA. 2021. “Diesel Particulate Matter (PM) Air Toxics.” EnviroAtlas National Data Fact Sheet. January. <https://enviroatlas.epa.gov/enviroatlas/DataFactSheets/pdf/Supplemental/DieselPMairtoxics.pdf>; USEPA. 2014. “Near Roadway Air Pollution and Health: Frequently Asked Questions.” [US]EPA-420-F-14-044. August. <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100NFFD.PDF?Dockey=P100NFFD.PDF>. p. 3; Lattanzio, Richard. 2022. Heavy Duty Vehicles, Air Pollution, and Climate Change. Report IF12043. Washington, DC: Congressional Research Service. <https://crsreports.congress.gov/product/pdf/IF/IF12043>.]
- 27 [Grace Brennan, Park on the Highway: Building a Cap Park as a Solution to Decades of Devastation Caused by the Construction of the Cross-Bronx Expressway, 49 Fordham Urb. L.J. 825 (2022). <https://ir.lawnet.fordham.edu/ulj/vol49/iss4/4>; Sooyoung Kim, Zafar Zafari, Martine Bellanger, and Peter Alexander Muennig, 2018. “Cost-Effectiveness of Capping Freeways for Use as Parks: The New York Cross Bronx Expressway Case Study.” American Journal of Public Health 108. P. 379-384. <https://doi.org/10.2105/AJPH.2017.304243>.]
- 28 [Negret, Marcel, and Carlos Mandeville. 2020. “Housing Segregation Is a Choice.” Regional Plan Association. August 21, 2020. <https://rpa.org/latest/lab/housing-segregation-is-a-choice>.]
- 29 [Though EJScreen uses a 500-meter distance (approximately 1,600 feet) for calculating traffic proximity, the truck traffic proximity calculation presented here uses 300 meters (approximately 1,000 feet). This decision was based on the EJScreen technical documentation and a review of other studies that considered roadway proximity and pollution, including a recent report from the Urban Institute which states that after a literature review, the report authors’ “determined...that pollution is most likely to persist within closer boundaries.” USEPA. 2019. EJSCREEN Technical Documentation. [https://www.epa.gov/sites/default/files/2021-04/documents/ejscreen\\_technical\\_document.pdf](https://www.epa.gov/sites/default/files/2021-04/documents/ejscreen_technical_document.pdf). p. 50; Samuels, Gabe and Yonah Freemark. 2022. The Polluted Life Near the Highway: A review of national scholarship and a Louisville case study. The Urban Institute. <https://www.urban.org/sites/default/files/2022-11/The%20Polluted%20Life%20Near%20the%20Highway.pdf>. p 5; American Lung Association. 2022. Living Near Highways and Air Pollution. <https://www.lung.org/clean-air/outdoors/who-is-at-risk/highways>. November; Kim, Deajin, et. al. 2022. Dynamic grid-receptor method for regional-level near-road air quality analysis. Environment. 105. April. <https://doi.org/10.1016/j.trd.2022.103232>; Carter, Sarah A., et al. In utero exposure to near-roadway air pollution and autism spectrum disorder in children. Environment International. 158. January. <https://doi.org/10.1016/j.envint.2021.106898>.]
- 30 [Truck traffic proximity was used for the analysis as it is a better gauge of exposure to traffic. Tolling Scenario E was used for truck traffic changes as it was the tolling scenario with the maximum truck traffic diversions. Both Tolling Scenarios E and G were used to explore non-truck traffic diversions – Tolling Scenario E was used to determine whether truck traffic and non-truck traffic behaved similarly



**and then Tolling Scenario G was used as it had the largest potential increases in non-truck traffic.**

**Additional explanation on methodology is provided in Appendix 17D, “Technical Memorandum.”]**

<sup>31</sup> **[Appendix 17D, “Technical Memorandum” describes and assesses the effects of the Project using the 80th percentile for air pollutants and the 66.66th percentile for chronic disease burdens. The use of the 90th percentile for determining locations for mitigation is consistent with the Environmental Quality’s Climate and Economic Justice Screening Tool’s methodology for addressing locations for investment.]**

<sup>32</sup> **[The following communities could have census tracts that merit place-based mitigation: High Bridge, Morrisania and Crotona, Tremont, Hunts Point, Mott Haven, Pelham, Throgs Neck, Northeast Bronx in the Bronx, NY; East Harlem, Randall’s Island, and the Lower East Side/Lower Manhattan in Manhattan, NY; Downtown Brooklyn, Fort Greene, and South Williamsburg in Brooklyn, NY; Orange, East Orange, and Newark in Essex County, NJ, and Fort Lee in Bergen County, NJ (except under Tolling Scenario G).]**

<sup>33</sup> The High Line is also a historic property (i.e., eligible for listing on the National Register), but is exempt from consideration as a Section 4(f) resource as a historic property as a former railroad property (23 CFR 774.13).

# 1. Introduction

## 1.1 OVERVIEW

Traffic congestion has been a problem in the Manhattan Central Business District (Manhattan CBD) for many years.<sup>1</sup> While traffic in the Manhattan CBD decreased during the height of the COVID-19 pandemic, volumes have nearly reached pre-pandemic levels and congestion has returned to Manhattan’s streets.<sup>2</sup> Indeed, in 2020 and 2021, New York City’s traffic congestion ranked worst among United States cities, with last-mile speeds in the Manhattan CBD of only 12 mph (**Figure 1-1**).<sup>3, 4</sup> At the same time, and as a way to further reduce congestion, the modernization of the Metropolitan Transportation Authority’s (MTA’s) commuter rail, subway, and bus network is necessary to create a faster, more accessible, and more reliable transportation network for the New York City region’s residents, commuters, and visitors.

**Figure 1-1. Most Congested Urban Areas (2021)**

United States	
1.	New York, NY
2.	Chicago, IL
3.	Philadelphia, PA
4.	Boston, MA
5.	Miami, FL

Source: INRIX, 2021

State and City of New York officials and stakeholder and advocacy groups have conducted multiple studies over the past 45 years to determine the most effective way to address congestion in the Manhattan CBD. These studies overwhelmingly pointed to congestion pricing, or introduction of tolls or fees for drivers, as the most effective tool.<sup>5</sup> Many studies also identified congestion pricing as a means to generate funds for transit investments in MTA’s network. A study by the Lund University Center for Sustainability Studies in Sweden confirms these conclusions, finding that a congestion charge is a highly effective means to reduce vehicular congestion, especially in combination with strategies for parking and traffic control; car sharing; and programs to discount transit for work, school, or personal trips.<sup>6</sup>

The New York City Department of Transportation (NYCDOT), MTA, and other transportation agencies have implemented programs to increase mobility and improve accessibility in the Manhattan CBD by nonvehicular modes and to reduce vehicular congestion. Private companies have collaborated with NYCDOT to establish car-share, scooter-share, and bicycle-share programs. NYCDOT has repurposed curbside parking to establish bicycle lanes and to increase pedestrian space with sidewalk and corner bump

<sup>1</sup> As defined by the MTA Reform and Traffic Mobility Act (“Traffic Mobility Act”), the Manhattan CBD consists of the geographic area of Manhattan south of and inclusive of 60th Street to the extent practicable but does not include the Franklin D. Roosevelt (FDR) Drive and the West Side Highway/Route 9A, including the Battery Park Underpass and any surface roadway portion of the Hugh L. Carey Tunnel that connects to West Street (the West Side Highway/Route 9A).

<sup>2</sup> Metropolitan Transportation Authority Day-by-Day Ridership Numbers. <https://new.mta.info/coronavirus/ridership>.

<sup>3</sup> INRIX 2020 Global Traffic Scorecard. <https://inrix.com/press-releases/2020-traffic-scorecard-us/>.

<sup>4</sup> INRIX 2021 Global Traffic Scorecard. <https://inrix.com/scorecard-city/?city=New%20York%20City%20NY&index=5>.

<sup>5</sup> Refer to **Appendix 2A, “Project Alternatives: Previous Studies and Concepts Considered,”** for a description of studies and congestion pricing proposals prepared since 1973.

<sup>6</sup> Von Arnold, Cecilia. April 26, 2022. “The most effective ways of reducing car traffic,” Lund University Center for Sustainability Studies. <https://www.lucsus.lu.se/article/most-effective-ways-reducing-car-traffic>.

outs. It has also converted curbside lanes and general-purpose traffic lanes to dedicated bus lanes on certain Manhattan avenues and east–west, crosstown streets. Additionally, MTA and other transit agencies offer reduced transit fares for the elderly, disabled, and school-aged children, and in early 2022, MTA implemented Fare Capping as part of its new fare system roll out (OMNY), which allows free, unlimited rides to customers the rest of the week once they have spent \$33 (the same as taking 12 trips). Many employers participate in a Federal program that allows employees a tax-free deduction for money used to purchase transit fares, and many companies have adopted flexible work schedules, including options to work remotely. Despite these various initiatives that should reduce vehicular traffic in the Manhattan CBD, and despite the existence in this region of the three largest commuter railroads in the United States, the largest bus system, and the largest subway system (the latter two of which operate 24 hours a day, 7 days a week, every day of the year), congestion persists.

Therefore, the Triborough Bridge and Tunnel Authority (TBTA), an affiliate of MTA; the New York State Department of Transportation (NYSDOT); and NYCDOT (collectively, the Project Sponsors) are proposing a program, known as the Central Business District Tolling Program (CBD Tolling Program or the Project), to address congestion.<sup>7</sup> The Project purpose is to reduce traffic congestion in the Manhattan CBD in a manner that will generate revenue for future transportation improvements, pursuant to acceptance into the Federal Highway Administration’s (FHWA’s) Value Pricing Pilot Program (VPPP). The Project would address the need to reduce vehicle congestion in the Manhattan CBD and create a new local, recurring funding source for MTA’s capital projects.

The Project Sponsors are seeking approval of the Project from FHWA under its VPPP, which is a program “intended to demonstrate whether and to what extent roadway congestion may be reduced through application of congestion pricing strategies, and the magnitude of the impact of such strategies on driver behavior, traffic volumes, transit ridership, air quality and availability of funds for transportation programs.”<sup>8</sup> Through this program, FHWA can provide tolling authority to state, regional, or local governments to implement congestion pricing.<sup>9</sup> Such approval is sought because certain streets within the Manhattan CBD are part of the National Highway System (**Figure 1-2**) and, in some instances, have been improved with Federal funding through FHWA. When FHWA reviews a Project Sponsor’s application to the VPPP, it must evaluate the potential effects of the proposed action in accordance with the National Environmental Policy Act (NEPA).

<sup>7</sup> In April 2019, New York State enacted the Traffic Mobility Act, authorizing TBTA to establish the CBD Tolling Program. For more information see **Appendix 2B, “Project Alternatives: MTA Reform and Traffic Mobility Act.”**

<sup>8</sup> Federal Highway Administration (FHWA). “Value Pricing Pilot Program.” [https://ops.fhwa.dot.gov/congestionpricing/value\\_pricing/index.htm](https://ops.fhwa.dot.gov/congestionpricing/value_pricing/index.htm).

<sup>9</sup> Ibid.



Figure 1-2. Manhattan CBD, National Highway System Arterials, and Routes into the Manhattan CBD



\* As defined by the MTA Reform and Traffic Mobility Act, the Manhattan CBD includes the geographic area in the borough of Manhattan south of and inclusive of 60th Street to the extent practicable but shall not include the FDR Drive and New York State Route 9A/West Side Highway, including the Battery Park underpass and any surface roadway portion of the Hugh L. Carey Tunnel connecting to West Street.

Source: ArcGIS Online, <https://www.arcgis.com/index.html>.

FHWA, in consultation with the Project Sponsors, has prepared this Environmental Assessment (EA) in accordance with NEPA and the NEPA implementing regulations promulgated by the Council on Environmental Quality (40 Code of Federal Regulations [CFR] Parts 1500 through 1508 and 1515 through 1518) and FHWA (23 CFR Part 771). FHWA is serving as the lead Federal agency for the NEPA review. The Project is being progressed as a NEPA Class III (EA) action under 23 CFR Part 771. NEPA Class III actions are those in which the significance of the environmental impact is not clearly established. This EA has been prepared to determine if the Project is likely to have a significant impact on the built and natural environment, thereby requiring the preparation of an Environmental Impact Statement.

## 1.2 PROJECT SETTING

New York City is the center of a large metropolitan region that includes portions of three states: New York, New Jersey, and Connecticut. The metropolitan region is the largest in the United States, with 22.2 million people and more than 10.7 million jobs. Within this region, New York City is the economic hub, with roughly 4.6 million (43 percent) of the region's jobs and 8.4 million (38 percent) of the region's population.<sup>10, 11</sup> For this study, the New York region comprises 28 counties, consisting of 12 counties in New York State (including the 5 counties that form New York City), 14 counties in New Jersey, and 2 counties in Connecticut.<sup>12</sup> **Figure 1-3** shows the regional study area.

Although New York City and the metropolitan region are home to multiple commercial districts, the traditional center for economic activity has been and continues to be Manhattan, particularly the commercial districts in Midtown (generally the area between 14th and 59th Streets) and Lower Manhattan (generally the area south of Canal Street). As defined for this Project, the Manhattan CBD consists of the geographic area of Manhattan south of and inclusive of 60th Street to the extent practicable but does not include the Franklin D. Roosevelt (FDR) Drive and the West Side Highway/Route 9A, including the Battery Park Underpass and any surface roadway portion of the Hugh L. Carey Tunnel that connects to West Street (the West Side Highway/Route 9A) (see **Figure 1-2**).

---

<sup>10</sup> U.S. Census Bureau. American Community Survey, 2015–2019.

<sup>11</sup> U.S. Census Bureau, 2012–2016 Census Transportation Planning Package.

<sup>12</sup> The 28-county regional study area consists of Bronx, Dutchess, Kings (Brooklyn), Nassau, New York (Manhattan), Orange, Putnam, Queens, Richmond (Staten Island), Rockland, Suffolk, and Westchester Counties in New York; Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren Counties in New Jersey; and Fairfield and New Haven Counties in Connecticut.

Figure 1-3. Regional Study Area



Source: ArcGIS Online, <https://www.arcgis.com/index.html>.



### 1.2.1 Regional Development Patterns

An island, Manhattan is separated from New Jersey by the Hudson River, from Brooklyn and Queens by the East River, from the Bronx by the Harlem River, and from Staten Island by New York Harbor. The Manhattan CBD is characterized by the following:

- Its skyline
- Cultural destinations (e.g., Theater District, World Trade Center Memorial and Museum, and Museum of Modern Art)
- Financial institutions (e.g., Wall Street and Midtown's business districts)
- Shopping districts (e.g., Fifth Avenue and Herald Square)
- Colleges and universities (e.g., New York University, The New School, the Fashion Institute of Technology)

The Manhattan CBD is not only a destination for business and commerce, but also home to about 617,000 residents.<sup>13</sup> Many residents of the Manhattan CBD live in mid-rise and high-rise apartment buildings; there are also several neighborhoods with lower density loft buildings, townhouses, rowhouses, and tenement housing such as Soho, Greenwich Village, the East Village, Chelsea, and Hell's Kitchen.

Upper Manhattan is more residential in character than the Manhattan CBD. The Upper West Side and Upper East Side neighborhoods border the Manhattan CBD as does Central Park. Like the Manhattan CBD, Upper Manhattan is characterized by a mix of land uses, although more residential and institutional uses are present in Upper Manhattan than the Manhattan CBD. Upper Manhattan also contains large public parks of a scale not found in the Manhattan CBD, including Central Park, Riverside Park, Morningside Park, and Highbridge Park.

Queens and Brooklyn, part of New York City and the largest boroughs in terms of land mass, are across the East River. While the neighborhoods in these boroughs are generally not as dense as Manhattan, some areas include substantial high-rise development (e.g., Long Island City, Downtown Brooklyn), and most neighborhoods are urban in character with mid-rise apartment buildings, brownstones, townhouses, and single-family houses on small lots. These boroughs are home to important transportation and entertainment destinations for the region (e.g., John F. Kennedy and LaGuardia Airports, Barclays Center, Citi Field, U.S. Tennis Center, Belmont Park, Coney Island). Nassau and Suffolk Counties, which are typically referred to as Long Island, lie east of Queens.

Toward the north, the Bronx is one of the most densely populated and poorest counties in the United States. Neighborhoods nearest Manhattan tend to have mid-rise to high-rise apartment buildings, and areas more distant from Manhattan and along the Hudson River tend to have single-family housing. Entertainment, educational, and cultural institutions in the Bronx include Yankee Stadium, the New York

---

<sup>13</sup> U.S. Census Bureau. American Community Survey, 2015–2019.

Botanical Garden, Bronx Zoo, and Fordham University. The Bronx has several large industrial and warehousing areas, and it is crossed by many interstate highways and arterial roadways that carry heavy volumes of traffic, including trucks. Westchester County borders the Bronx to its north.

Geographically isolated from the rest of New York City, Staten Island is the smallest borough in terms of population. It has much lower population density than the other boroughs of New York City, and its residential and commercial development patterns are characteristic of the suburbs. No roadway connects Staten Island and the Manhattan CBD so drivers from Staten Island must travel through Brooklyn or New Jersey to reach Manhattan.

Hudson County, New Jersey, contains multiple cities, such as Hoboken, Jersey City, and West New York. These cities have development patterns similar to the Bronx, Brooklyn, and Queens with a mix of high-rise and mid-rise housing, including apartment towers, townhouses, brownstones, and rowhouses. Jersey City has a large business district that includes several office towers along its Hudson River waterfront.

The New York City metropolitan region has a long development history and has diverse settlement patterns and housing stock. The counties that lie beyond the five boroughs of New York City and Hudson County, New Jersey, have small, long-established towns with urbanized town centers that have grown to include suburban subdivision developments. There are smaller cities with densely developed downtown areas, high- and mid-rise multifamily housing, and single-family houses on small lots (e.g., Bridgeport, Connecticut; Great Neck, Long Island; Newark, New Jersey; and White Plains, New York) and waterfront communities that were established as recreational retreats but have become year-round communities. Farms and small rural communities are near the farther extents of the regional study area.

### 1.2.2 Traveling to the Manhattan CBD

The New York metropolitan region has a robust transit network, with the largest subway and bus systems and the three largest commuter rail systems in the United States.<sup>14</sup> Indeed, the transit network is unparalleled in many cities with respect to the number of routes and types and frequency of service. The Manhattan CBD is the hub for much of this network and people can arrive via the following options:<sup>15</sup>

- The New York metropolitan area's three commuter rail systems:
  - Long Island Rail Road (LIRR) provides service connecting Brooklyn, Queens, Nassau, Suffolk, and Penn Station New York. LIRR will also soon provide service to the new Grand Central Madison terminal.
  - Metro-North Railroad (Metro-North) provides service connecting Grand Central Terminal and Manhattan north of 125th Street, the Bronx, Westchester, Putnam, and Dutchess Counties in New York State (east of Hudson), and southwestern Connecticut. Through agreement with NJ TRANSIT,

<sup>14</sup> American Public Transit Association (APTA). "Public Transportation Ridership Report: Fourth Quarter 2021." <https://www.apta.com/wp-content/uploads/2021-Q4-Ridership-APTA.pdf>.

<sup>15</sup> A limited number of people also arrive by helicopter at one of three heliports in Manhattan and by seaplane using the Midtown Skyport on the East River.

## Chapter 1, Introduction

Metro-North also provides service connecting Orange and Rockland Counties (west of Hudson) with Penn Station New York.

- NJ TRANSIT connects the New Jersey counties and Penn Station New York or Hoboken Terminal in New Jersey, from which passengers can take the Port Authority Trans-Hudson (PATH) train to multiple stations in Manhattan CBD.
- The New York City subway consists of 28 routes that operate in Bronx, Brooklyn, Manhattan, and Queens in New York City. Twenty-five subway routes traverse or terminate in the Manhattan CBD. Most routes that traverse the Manhattan CBD have multiple stations in the area, serving commuters to the Manhattan CBD and local trips for its residents. Several subway stations in the Manhattan CBD are interchange points between subway routes.
- The New York region has a vast bus network. The Manhattan CBD is served by commuter buses operated by transit agencies and private companies, providing service between neighborhoods in the New York City boroughs and suburban counties and the Manhattan CBD. Many bus routes terminate at the Port Authority Bus Terminal in Midtown Manhattan. Multiple express/Select Bus Service and local bus routes operate along the north–south avenues and east–west streets within the Manhattan CBD.
- A tram operates between Roosevelt Island and Manhattan.
- The City of New York and private companies operate ferry service to the Manhattan CBD. Ferry routes to Manhattan operate from the Bronx, Brooklyn, Queens, and Staten Island in New York City and Bergen, Hudson, and Monmouth Counties in New Jersey. The primary ferry terminals in Manhattan are located at West 39th Street and East 34th Street in Midtown Manhattan and Battery Park City and Wall Street/Pier 11 in Lower Manhattan.
- MTA provides on-demand, point-to-point paratransit service for qualifying individuals.

Refer to **Subchapter 4C, “Transportation: Transit,”** for more detailed information about the region’s transit systems.

People may also reach the Manhattan CBD on foot or by bicycle. The north–south avenues that cross 60th Street have sidewalks, and bicycle lanes are available on Amsterdam Avenue, Columbus Avenue, Central Park West, Second Avenue, and First Avenue. Shared-use bicycle and pedestrian paths also run along the Hudson and East Rivers. From Brooklyn and Queens, people may cross the Ed Koch Queensboro, Williamsburg, Manhattan, and Brooklyn Bridges by bicycle or on foot. There is no direct bicycle or pedestrian access between New Jersey and the Manhattan CBD since pedestrians are prohibited from the tunnel crossings.<sup>16</sup>

---

<sup>16</sup> Pedestrians and bicyclists are permitted to cross the George Washington Bridge and can reach the Manhattan CBD using the Hudson River Greenway or one of Manhattan’s north–south avenues.

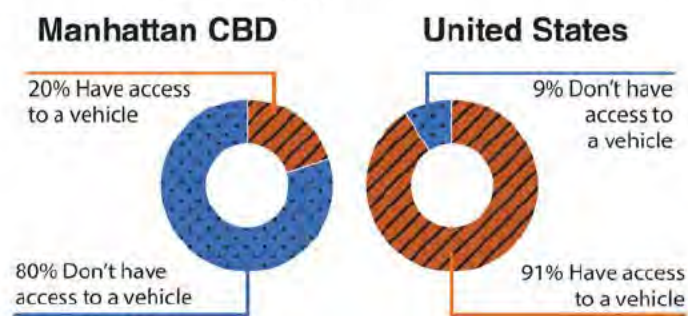


### 1.2.3 Traveling within the Manhattan CBD

The Manhattan CBD has a long development history, beginning before the advent of the automobile and rapidly expanding before the predominance of the automobile. Thus, options other than private automobiles are available to travel around the Manhattan CBD. As noted previously, numerous subway and bus routes serve the Manhattan CBD, and there is a network of bicycle lanes and a widely available bicycle-share program. The Manhattan CBD is very walkable with sidewalks on both sides of most streets, with mostly signalized intersections that have crosswalks and pedestrian signals, and with many destinations near each other that are easily accessible by foot.

Because most businesses do not offer on-site, free parking and it can be difficult to find curbside parking, driving within the Manhattan CBD is not typical except for commercial deliveries. Indeed, 80 percent of Manhattan CBD residents do not own or have ready access to a vehicle (Figure 1-4).<sup>17</sup> Taxis and for-hire vehicles (FHVs) provide point-to-point service within the Manhattan CBD and are convenient for trips that would otherwise involve multiple transit routes and modes or a long walk (e.g., crosstown trips between the east and west sides of Manhattan).<sup>18</sup> However, trips by taxi or FHVs (a category that includes taxis and app-based services) may be costly. Therefore, many people use the subway, buses, or bicycles to make their longer local trips within the Manhattan CBD. Walking is the typical choice for shorter trips or even longer trips that would otherwise involve multiple transit modes or transfers.

Figure 1-4. Vehicle Access (Manhattan CBD compared to United States)



Sources: Census Transportation Planning Package, American Community Survey 2012-2016

### 1.2.4 Commuting to the Manhattan CBD

According to 2012–2016 Census Transportation Planning Package (CTPP) data, nearly 10.7 million people have their place of employment in the regional study area. While the Manhattan CBD is the traditional economic hub of the region, many residents of the region do not work in or regularly travel to the Manhattan CBD. In total, approximately 1.5 million people work in the Manhattan CBD, and approximately 1,262,400 of those workers commute to the Manhattan CBD from outside the CBD. Approximately 65 percent of those commuters are from New York City, 8 percent are from Long Island, 7 percent are from

<sup>17</sup> These data are from the CTPP data product based on the 2012–2016 American Community Survey. The CTPP provides custom tables describing residence, workplace, and trips from home to work. The U.S. Census Bureau has not updated the CTPP to reflect more recent American Community Survey data.

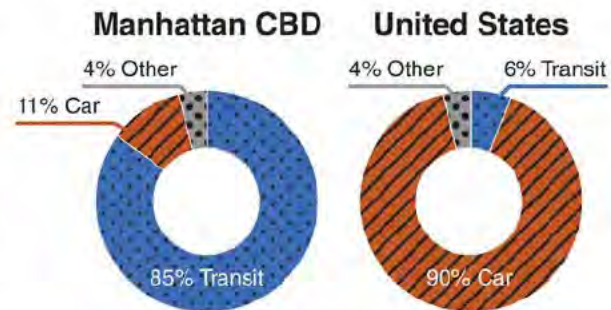
<sup>18</sup> While taxis are sometimes considered a type of for-hire vehicle, for the purposes of this EA, they are treated separately.



New York counties north of New York City, 18 percent are from New Jersey, and 2 percent are from Connecticut (see **Figure 1-6** on the following page).

According to 2012–2016 CTPP data, 85 percent of workers who commute to the Manhattan CBD take public transportation to travel to work and 11 percent (approximately 142,500 workers) drive to work. The remaining 4 percent travel by bicycle, walking, motorcycle, and taxi and FHV. This level of commuting by public transportation is much higher than in the United States overall, where most people commute to work by car (**Figure 1-5**).

**Figure 1-5. Travel Modes to Work (Manhattan CBD compared to United States)**



Sources: Census Transportation Planning Package, American Community Survey 2012-2016

### 1.3 PROJECT PURPOSE

The Project purpose is to reduce traffic congestion in the Manhattan CBD in a manner that will generate revenue for future transportation improvements, pursuant to acceptance into FHWA's VPPP.

### 1.4 PROJECT NEEDS

#### 1.4.1 The Need to Reduce Vehicle Congestion in the Manhattan CBD

The Manhattan CBD is the commercial center of a 28-county region that surrounds and includes New York City. Within nine square miles, the Manhattan CBD houses 1.5 million jobs, 450 million square feet of office space, and more than 617,000 residents.<sup>19, 20, 21</sup> It is also a regional and national destination for commerce, entertainment, and tourism, and the economic hub of the New York City region. The New York City region's population has grown by 5 percent since 2000 and is expected to continue to grow, with the population projected to exceed 25 million by 2045. New York City's population is projected to surpass 9 million by 2045.<sup>22</sup>

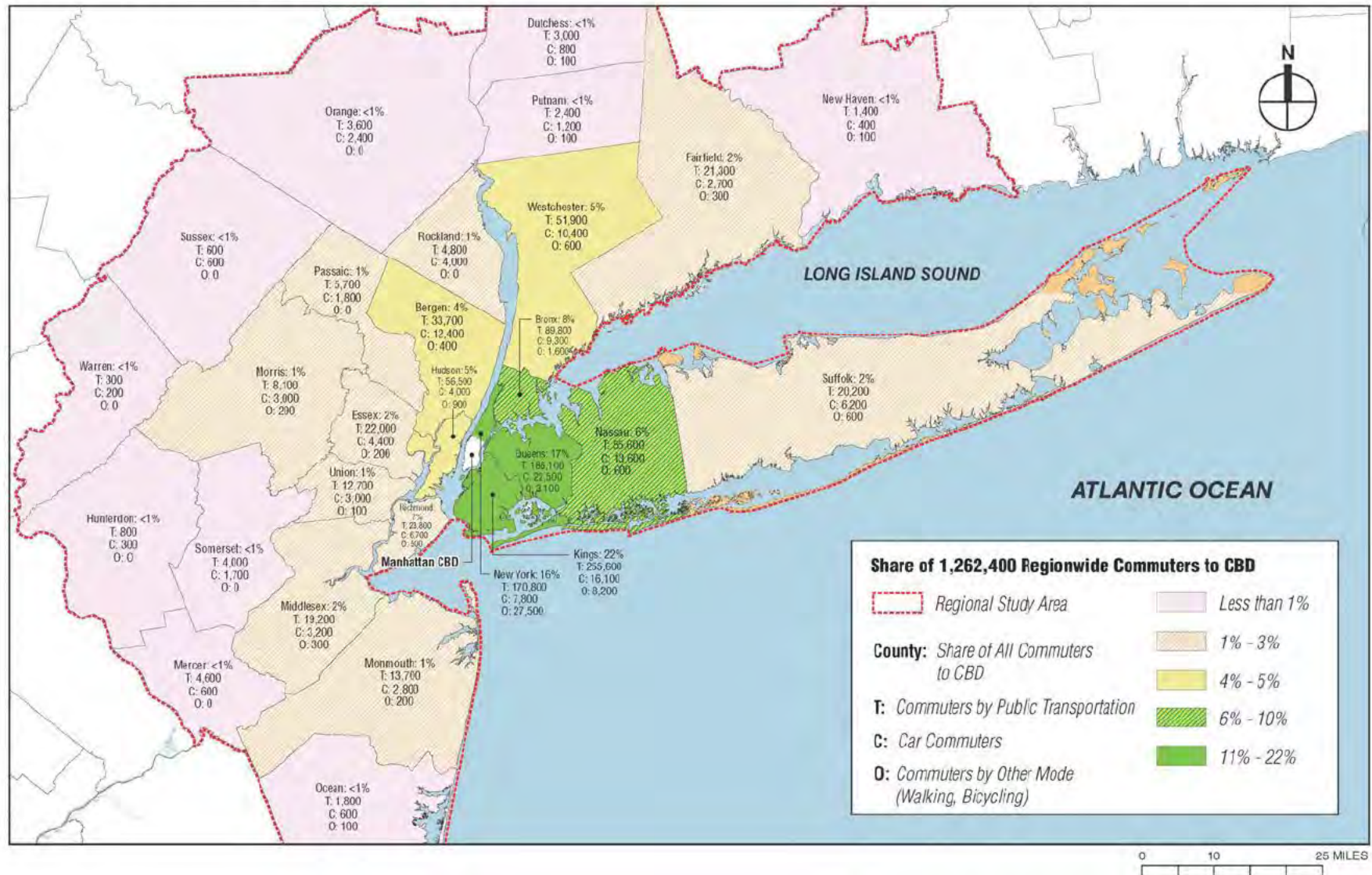
<sup>19</sup> U.S. Census Bureau, 2012–2016 Census Transportation Planning Package.

<sup>20</sup> New York State Comptroller. 2017. New York City's Office Market report.

<sup>21</sup> U.S. Census Bureau. American Community Survey, 2015–2019 Estimates.

<sup>22</sup> New York Metropolitan Transportation Council (NYMTC). 2015. 2050 Socioeconomic and Demographic Forecasts. <https://www.nymtc.org/DATA-AND-MODELING/SED-Forecasts/2050-Forecasts>.

Figure 1-6. Manhattan CBD Work Commuters: Origin



Source: U.S. Census Bureau. Census Transportation Planning Package, 2012–2016 Estimate.



The growth in New York City's population and employment, particularly within the Manhattan CBD, has increased traffic congestion and delays, slowing travel and jeopardizing the vitality of the area. A 2018 study by the Partnership for New York City (a local business group) stated that "traffic congestion will be a \$100 billion drag on the New York metro area economy over the next five years." It cited the Manhattan CBD as the primary source of traffic congestion in the region and reported that excess congestion had increased by 53 percent since it began studying the issue in 2006.<sup>23</sup>

This congestion makes travel a challenge as well. NYCDOT's *New York City Mobility Report* found that the Manhattan CBD had the highest concentration of slow-moving buses in the entire city during the average weekday PM peak period (4 p.m. to 6 p.m.), with speeds between 5 mph and 6 mph.<sup>24</sup> This is substantially slower than the average citywide bus speed of 7.58 mph.<sup>25</sup>

According to FHWA, "congestion usually relates to an excess of vehicles on a portion of roadway at a particular time resulting in speeds that are slower—sometimes much slower—than normal or 'free-flow' speeds. Congestion often means stopped or stop-and-go traffic."<sup>26</sup> FHWA identifies several typical causes of traffic congestion: physical bottlenecks; construction work zones; traffic incidents, such as crashes and disabled vehicles; inclement weather; special events that create a surge in traffic or create detours; day-to-day variability in traffic flows; and insufficient intersection capacity, sometimes related to nonoptimized traffic signals. Of these, FHWA cites bottlenecks as the greatest source of congestion.<sup>27</sup> Given that Manhattan is an island, with limited opportunity to increase the roadway capacity within or leading to and from it, the principal means to address congestion caused by bottlenecks is to reduce demand or the number of vehicles that drive into and out of Manhattan.

### Congestion by the Numbers

**Cost of Congestion:** 102 hours of lost time; nearly \$1,595 per year per driver in the New York City region.\*

**Travel Speeds:** Decreased [23] percent in the Manhattan CBD, from 9.1 miles per hour (mph) to 7.1 mph between 2010 and 2019."

**FHV Registrations:** Tripled in New York City, from fewer than 40,000 to more than 120,000 between 2010 and 2019. Due to the effects of the COVID-19 pandemic and the city's continued cap on FHV registrations, the number of FHVs making trips fell to 70,000 by April 2022.†

**Local Bus Speeds:** Declined 28 percent in the Manhattan CBD since 2010. The average speed of Select Bus Service (New York City Transit's bus rapid transit service) routes in Manhattan are 19 percent slower than Select Bus Service routes in other boroughs.††

#### Sources

\* INRIX 2021 Global Traffic Scorecard. <https://inrix.com/scorecard-city/?city=New%20York%20City%20NY&index=5>.

†† NYCDOT. August 2019. *New York City Mobility Report*. <https://www1.nyc.gov/html/dot/downloads/pdf/mobility-report-print-2019.pdf>.

† New York City Taxi and Limousine Commission and NYCDOT. June 2019. *Improving Efficiency and Managing Growth in New York's For-Hire Vehicle Sector*; NYC TLC FHV trip data.

†† NYCDOT. August 2019. *New York City Mobility Report*. <https://www1.nyc.gov/html/dot/downloads/pdf/mobility-report-print-2019.pdf>; New York City Transit analysis.

<sup>23</sup> Partnership for New York City. January 2018. "\$100 Billion Cost of Traffic Congestion in Metro New York". <https://pfnyc.org/wp-content/uploads/2020/01/2018-01-Congestion-Pricing.pdf>.

<sup>24</sup> New York City Department of Transportation (NYCDOT). August 2019. *New York City Mobility Report*. <https://www1.nyc.gov/html/dot/downloads/pdf/mobility-report-print-2019.pdf>.

<sup>25</sup> Ibid.

<sup>26</sup> FHWA. 2020. *Traffic Congestion and Reliability: Trends and Advanced Strategies for Congestion Mitigation*. [https://ops.fhwa.dot.gov/congestion\\_report/executive\\_summary.htm](https://ops.fhwa.dot.gov/congestion_report/executive_summary.htm).

<sup>27</sup> Ibid.